SEPTEMBER 24, 1954 20 CENTS

U.S. News & World Report

The United States News ® World Report ®

MAINE ELECTION— NATIONAL TREND?

INSIDE STORY OF—

THE HYDROGEN BOMB:

HOW THE U. S. ALMOST LOST IT

By James R. Shepley and Clay Blair, Jr.

M36520 D4 A1043TJANS5H
MR J H MORIARTY
LIBRARIES
LAFAYETTE IND

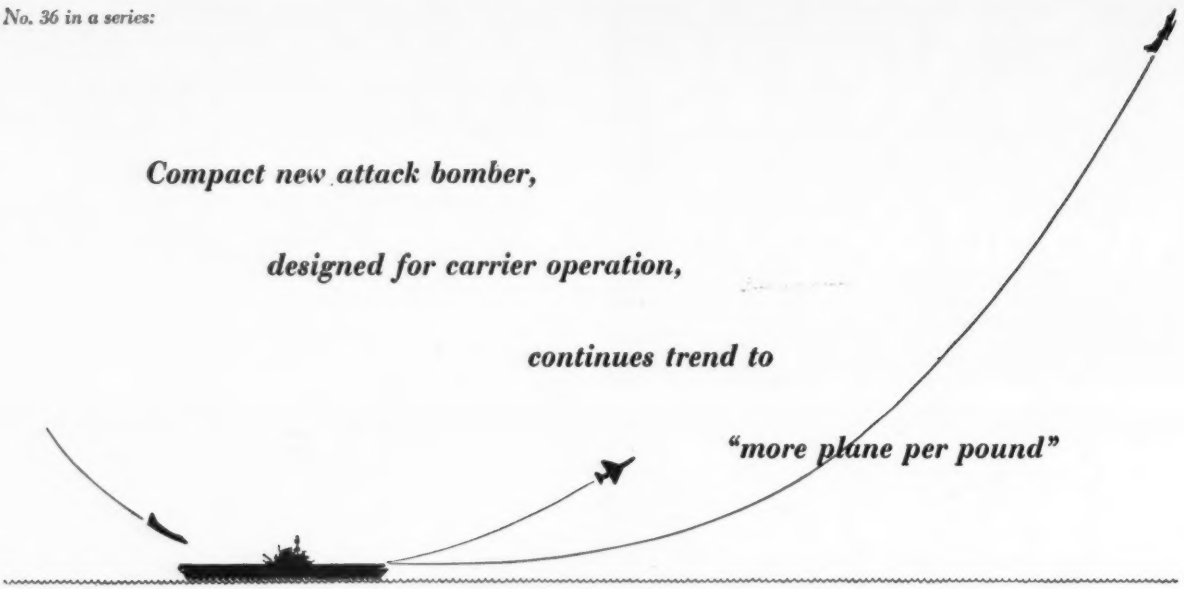
No. 36 in a series:

Compact new attack bomber,

designed for carrier operation,

continues trend to

"more plane per pound"



–the U. S. Navy's Douglas A4D Skyhawk

Continuing a growing trend, the Douglas A4D attains maximum efficiency—at lower production cost—through highly simplified design.

Faster than many of today's fighters, the Douglas A4D attack bomber is so compact that it can be stored on carriers without folding its wings, giving a consequent reduction in weight, cost, and fuel consumption. In all respects the Skyhawk meets, and more than meets, demands on range, climb, armament, and load-carrying flexibility—exemplifying the Douglas philosophy of more performance per pound of airplane.

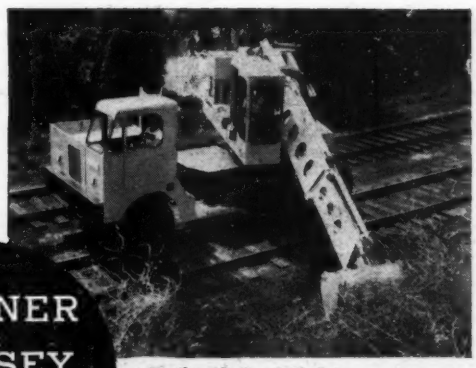
Performance of A4D shows Douglas leadership in aviation. Planes that can be built in quantity to *fly farther and faster with a bigger payload* are a basic rule of Douglas design.

Be a Naval flier—write to Nav Cad, Washington 25, D. C.

Depend on *DOUGLAS* **First in Aviation**

There has never been a time

when you couldn't sell more of a better product at a lower price. Hundreds of products could be made better by modern high-precision Warner & Swasey machine tools, and at costs as much as 40% lower. Everyone benefits including the worker whose job becomes more secure and the nation whose economy becomes more healthy.



Railroad Gradall doing maintenance on right-of-way

WARNER & SWASEY
Cleveland
PRECISION MACHINERY SINCE 1880

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

IN THIS ISSUE

★ Do Europe's Leaders Have a Plan Now?

Without EDC, do European leaders see any way of getting an effective defense? What do the French want to do? How do the Germans plan to rearm? Here, in an exclusive interview, you get the story from the chairman of the Senate's Foreign Relations Committee, who has been talking extensively with Europe's top men. Page 36.

★ Desegregation Hits Washington, D. C.

What happened when races were mixed in schools for the first time in any major Southern city? An on-the-scenes report begins on page 24.

★ Where Incomes Are Rising Now

What effect has the business setback had on people's incomes? Which parts of the U. S. are getting more? Where are incomes off? This article gives the whole story. Page 114.

★ Contents

March of News 4
Tomorrow: A Look Ahead 9
Washington Whispers 12
People of the Week 16
Maine Election—National Trend? 21
When Negroes Go to School With Whites 24
Where U. S. May Fight Next 30
Mr. Dulles Keeps on the Go 35
What Europe's Leaders Told Senator Wiley
Interview With Chairman of
Senate Foreign Relations Committee 36
The Man—The News:
Robert Murphy—Trouble Shooter 44
Worldgram 49
Shock Absorber for Business 53
Inside Story of the Hydrogen Bomb:
How the U. S. Almost Lost It
By James R. Shepley, Clay Blair, Jr. 58
How Executives Rate Own Stocks 74
Trading With Reds: What Argentina Found 85
News-Lines for Businessmen 108
Memo From Libya 111
Spending Power: How It Is Shifting 114
We've Been Asked:
What Reds Get If They "Talk" 118
News You Can Use 123
Plus and Minus:
Indicators of Business Activity 126
Labor Week:
Scandal in Unions' Welfare Funds 129
Trend of Business 137
Finance Week:
Ike's Budget Still Off Balance 140
Business Around the World 147
McCarthy "Censure" Case: Evidence Is In,
Verdict Yet to Come—From the Record .. 150
David Lawrence Editorial 160

The Associated Press is exclusively entitled to the use for republication of the local telegraphic and cable news published herein, originated by U. S. News & World Report or obtained from The Associated Press.

HANDY WAY TO SUBSCRIBE

U. S. NEWS & WORLD REPORT
Circulation Department, 437 Parker Ave., Dayton 1, Ohio

Please enter my subscription to U. S. News & World Report for one year and send bill to me. (U. S., its possessions and Canada, $5, other countries, $6.)

Name _____

Address _____

City _____ State _____

NHW 24

THE UNITED STATES NEWS

WORLD REPORT

U. S. WEEKLY
Three Titles Reg. U. S. Pat. Off.

Published weekly at Washington, D. C., Editorial and Executive Offices, the United States News Building, 24th & N Streets, N.W., Washington 7, D. C. Subscription rates, delivered prepaid, to United States, its possessions and Canada, $5 for one year, $8 for two years, $10 for three years. Postage to other countries $1 a year additional. Entered as second-class matter at the post office Washington, D. C., under the act of March 3, 1879.

Entire contents of this publication copyrighted 1954 by United States News Publishing Corporation. Rights reserved under Pan American Copyright Convention and International Copyright Convention.

BOARD OF EDITORS

DAVID LAWRENCE, *Editor*
OWEN L. SCOTT, *Executive Editor*
BEN J. GRANT, L. NOBLE ROBINSON
Assistant Executive Editors
CARSON F. LYMAN
Managing Editor
WALTER HUSTED, *General News Editor*
DEREK FOX, *Art Editor*

ASSOCIATE EDITORS

W. B. RAGSDALE, J. FRANK DIGGS
RICHARD L. TURNER, GEORGE W. BOLTON
M. L. RAMSAY, GLENN WILLIAMS
JOHN H. ADAMS, W. C. BRYANT
FRED M. HARMON, GEORGE E. JONES
ARCHIE ROBINSON, JULES B. BILLARD
LEONARD WILLIAMS, ROBERT GINSBURGH
CHARLES M. PLATT, DONALD P. DOANE
A. S. McLEOD, *Chief Economic Unit*
PHILIP H. BOLLINGER, CHARLES H. DAVEY
JOHN B. BLEDSOE, THOMAS H. F. HUGHES

Business Editors: New York, GILMORE IDEN
San Francisco: EDWIN J. DRECHSEL

NEWS EDITORS

TURNER ROSE, WILLIAM H. RIEBOLD
THURBER W. CUSHING, DONALD BECKER
F. W. GAPP, JOHN P. SUTHERLAND
N. KEY HART, ALBERT J. MEYERS
FRED A. EMERY, L. DAVID LeROY
FRED E. GALBRAITH, JR.

Assistant News Editors: Barbara Blair Furlow, Iva Holland, Lucy Cobb Jones, Joanne Egan.

Research: Catherine Adams, Barbara Eddy, Mabel S. Groettum, Thomas E. Russell, Donald Smith.

WORLD STAFF

HOWARD FLIEGER, *Directing Editor*
JOHN R. FLEMING, *Associate Director*

CHARLES FOLTZ, JR., *European News Editor*
CLARK H. GALLOWAY, *Inter-American News Editor*
PERRY K. SELLON, *Editor, World Business*

CHARLES H. KLINE, *Associate Editor, London*

REGIONAL EDITORS ABROAD

ROBERT KLEIMAN ..... Western Europe
KURT LACHMANN ..... Central Europe
JOHN D. LAW ..... Southern Europe
JOSEPH FROMM ..... Middle East
ROBERT P. MARTIN ..... Japan and the Far East

BUREAUS: LONDON, PARIS, BONN, ROME, BEIRUT, TOKYO

ART DEPARTMENT, WASHINGTON

H. KLEBANOFF, *Director*
J. Ernest Beavin, H. C. Richardson, Walter O. Gretschel, E. H. Castens, M. J. Shimp
Staff Photographer: Thomas J. O'Halloran, Jr.

LUTHER A. DAWSON, *Librarian*

BUSINESS DEPARTMENT

24th & N Sts., N.W. Washington 7, D. C.
JOHN H. SWEET, *Publishing Director*
ANTHONY R. GOULD, *Business Manager*
HAROLD M. WELLS, *Executive Secretary*
W. L. BRAUER, *Treasurer*

ADVERTISING DEPARTMENT

30 Rockefeller Plaza, New York 20, N. Y.
Tel. Circle 6-3366
H. L. BEHLKE, *Director of Advertising*

NORMAN O. MICK, *Associate Advertising Director*
35 East Wacker Drive, Chicago 1, Ill.
Tel. Dearborn 2-4042

CIRCULATION DEPARTMENT

435 Parker Avenue, Dayton 1, Ohio
W. W. SPURGEON, *Manager*

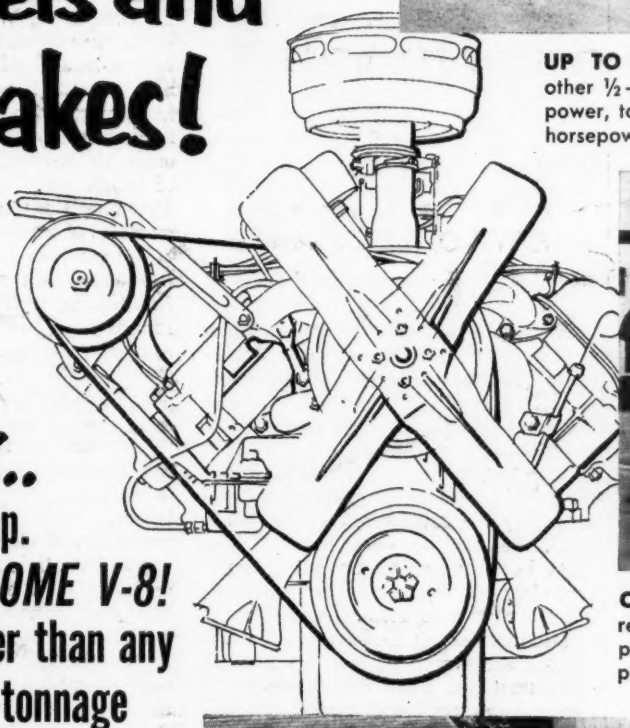
PRODUCTION OFFICE

RALPH M. FRANCISCO, *Manager*
350 Dennison Avenue, Dayton 1, Ohio
Tel. Melrose 9231

All communications relating to news or editorial matters should be addressed to the Executive Offices, 24th & N Streets, N.W., Washington 7, D.C. Tel. District 7-2900. Communications relating to subscriptions should be addressed to Circulation Department, 435 Parker Avenue, Dayton 1, Ohio

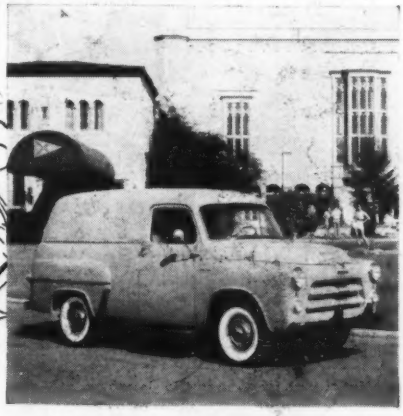
World's most powerful pick-ups, panels and stakes!

UP TO 39.4% MORE POWER than other ½-, ¾-, and 1-ton trucks. It's low-cost power, too! Dodge V-8 pick-ups offer most horsepower for your truck dollar.

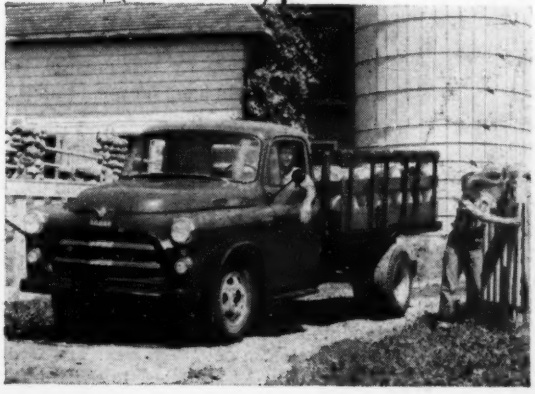


Now... new 145-hp. *POWER-DOME V-8!* More power than any other low-tonnage truck engine!

Test for yourself the flashing acceleration, the big power reserve of this new 145-hp. Power-Dome V-8 . . . the ultra-modern truck engine that gives Dodge pick-ups and stakes *more power than any low-tonnage truck!* Ask your dependable Dodge truck dealer to show you a new Power-Dome V-8 or a 110-hp. thrifty six!



OFFERS MORE MILES PER GALLON on regular gas—most hp. per cu. in. displacement of any popular truck engine—prove new Power-Dome V-8's economy.



"NEW-TRUCK" POWER LASTS LONGER: Power-Dome design . . . proved in higher tonnage models . . . means fewer power-stealing "hot spots" in combustion chambers.

More proof **that Dodge trucks offer a better deal for the man at the wheel!**

DODGE "Job-Rated" TRUCKS

An announcement to Gentlemen

IF it is your Custom to enjoy a Scotch with both AGE & nobility, be advised that our House imports 20-year-old Martin's Fine & Rare and 12-year-old Martin's De Luxe. To be found at private clubs, fine publick taverns, spirit shops, hostelries, etc. Put some aside today.

—Respectfully,
McKesson & Robbins, Inc.
New York, N. Y., importers thereof

Blended Scotch Whiskies

20 years old
86.8 proof

12 years old
86.8 proof

The March of the News

POLITICAL TALK

MAJOR CAMPAIGNS of the November elections got under way as both parties set out to woo voters from coast to coast.

Off on separate speaking tours which, between them, would cover 21 States, went Vice President Richard M. Nixon and House Speaker Joseph W. Martin, Jr. They would deliver more than 30 formal addresses, carry the word to local Republican leaders that the party, as of now, needed a shot in the arm.

Democrats, meanwhile, heard Adlai E. Stevenson lambaste the Republicans at Cincinnati. Later, at a party rally in Indianapolis, Democrats got the news that one of their chief vote getters, former President Harry S. Truman, would make only one address in the coming campaign—at Kansas City on October 16.

HOW TO PLEASE A RED

THREE AMERICANS LEARNED, through 18 months of bedbugs and brain washing, how to get along with the Chinese Reds. But for correspondents Richard Applegate (National Broadcasting Company) and Donald Dixon (International News Service) and ship captain Ben Krasner the lessons were painful.

The trio, sailing Applegate's yacht between Hong Kong and Macao, were captured by the Communists on March 21, 1953. Released last week, they told how they had managed to stay alive. Applegate learned "what they wanted to hear, and I gave it to them." He added: "I started confessing to being in Chinese waters and everything else they asked. I found out the Reds wanted me to lie about germ warfare in Korea, so I lied plenty."

But it remained for Dixon to give the most apt description of Communists. He said: "They like to jump on small things."

REPORT ON MANILA

SECRETARY OF STATE John Foster Dulles returned from Manila, reported to the nation on the results of that trip, and took off again—for conferences in Europe on West German rearmament.

While in Washington, Mr. Dulles took time to restate what apparently is the basic American defense policy: The U. S. stands ready "at all times" to strike back at Communist aggression in Southeast Asia or the Pacific "by means and at places" of its own choosing.

This policy of "instant retaliation" was first stated by Mr. Dulles in a speech last January 12. Since then the Communists have scored two major victories: the scuttling of the European Defense Community and the truce in Indo-China.

NEW SPY DRIVE

SOMETHING apparently was stirring at the Justice Department. Official confirmation was lacking, but Attorney General Herbert Brownell, Jr., it was said, was preparing to use a new weapon to get indictments against members of Soviet espionage rings that operated in the U. S. during World War II.

The new weapon: The recently passed witness-immunity law. It can force a witness to testify if he is granted immunity from prosecution, thus invalidating refusal to testify under the Fifth Amendment. Mr. Brownell figured the testimony of people who have pleaded the Fifth Amendment would wrap up cases against members of former spy rings.

Not overlooked in Mr. Brownell's preparations were the political implications. Republicans, trying desperately to hold control of Congress, could use more campaign material.

TWO-WAY WINDFALLS

A FORMER OFFICIAL of the Federal Housing Administration told Senate investigators how some apartment-house builders went about getting windfall profits out of Government-backed housing projects. In one case, ex-official Frederick A. Van Patten said, his boss, Clyde L. Powell, borrowed $3,000 from a Virginia builder to cover his gambling losses. The builder, the witness explained, then charged the $3,000 off as part of the cost of getting the mortgage.

Investigators were hearing from the testimony that builders were not the only ones getting windfalls.

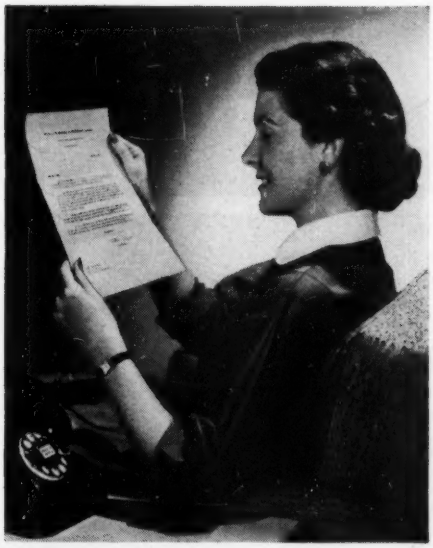
RED SCHOOLTEACHER

THE RUSSIANS, who had an unhappy experience with one of their schoolteachers back in 1948, decided to try again. On her way from Moscow to teach children of Russian diplomats at the Embassy in Washington was Valentina E. Sostavkina.

Since 1948, when Mrs. Oksana Stepanova Kasenkina jumped to freedom from a consulate window in New York and thereby caused an international incident, the Russians have had no formal school in Washington. This time, they presumably have looked long and carefully for a politically reliable teacher.

"THE VOICE WITH A SMILE"

IN SHAREOWNER RELATIONS



"The Voice With a Smile" has long been the symbol of telephone service. But it doesn't stop there. We try very hard to keep this same friendly, courteous spirit of helpfulness in everything we do.

That applies particularly to our relations with shareowners. For without shareowners there would be no telephone service and no telephone business.

One of the distinctive things about the ownership of the American Telephone and Telegraph Company is the great number of small shareowners. They are people in all walks of life, in every section of the country. Many own no other stock.

Often there are some things they would like to know about the business or their securities and we are glad to have them communicate with us. Sometimes it is a simple thing. Sometimes it may be a matter that requires quite a lengthy reply.

In every case we look upon the request not as a name or an address but as a letter from a friend. And we try to answer it in the same spirit.

In the past year we have answered more than 180,000 letters from owners of our stock and debentures. This is in addition to information sent to all shareowners. Many a time, when it is something in a rush or urgent, we speed the reply by telephone.

It takes a lot of time and work, of course, but we consider it a privilege and not a chore. Service is our business and efficient and friendly treatment is not only for customers. It is for shareowners, too.

BELL TELEPHONE SYSTEM

LOOK WHAT'S HAPPENING IN METALS

A new kind of brass brightens

up the American Home

ANACONDA DEVELOPS AN EASILY POLISHED SHEET METAL THAT CUTS THE COST OF MAKING HUNDREDS OF ATTRACTIVE HOUSEHOLD ITEMS OUT OF NOW-PLENTIFUL BRASS.

There's important news in brass today—for both manufacturer and consumer.

It's a new kind of brass—called Formbrite*—developed and sold by The American Brass Company, an Anaconda subsidiary.

Brass is always in fashion. And, like all brass, Formbrite has a deep-down solid feel—a warmth and authority that other metals don't have. But there's a marked difference between Formbrite and other brasses . . .

NEW . . . AND BETTER

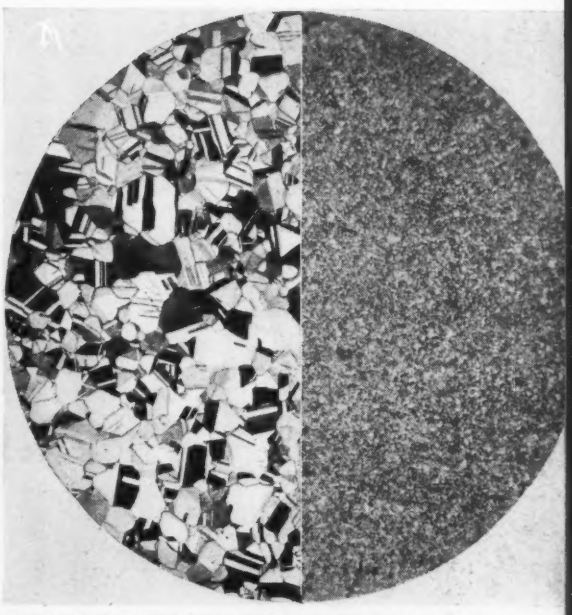
By special methods of rolling and annealing, Formbrite has been given a superfine grain structure. That makes polishing easier and faster . . . often as much as 50% . . . often saves more than the cost of the metal itself. Homeowners will love its more lustrous, more attractive, more scratch-resistant finish. Manufacturers will like the stronger, stiffer, "springier" qualities of this ductile and readily formed brass . . . plus the fact that Formbrite costs no more than ordinary brass. *Formbrite registered U.S. Patent Office.

◀ **OPEN ANY DOOR**—and walk in. The beauty and warmth of brass is more *at home* in the American home today than ever. Brass is traditional—yet functional. It can't rust. Formbrite—Anaconda's new brass—adds extra luster to hundreds of items made of sheet metal—doorknobs, hinges, fireplace equipment, lighting fixtures, and many others.

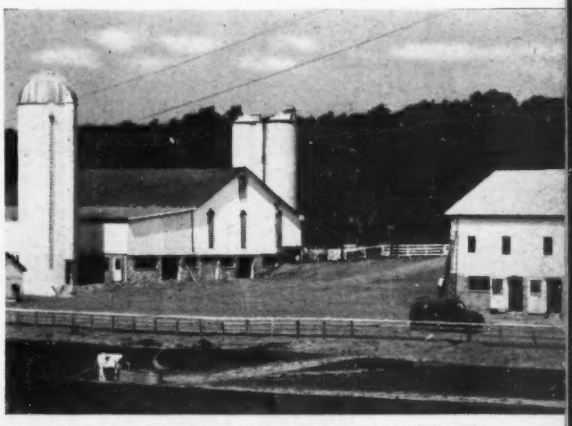
ANACONDA®

PRODUCERS OF: Copper, zinc, lead, silver, gold, platinum, cadmium, vanadium, selenium, uranium oxide, manganese ore, ferromanganese and superphosphate.

MANUFACTURERS OF: Electrical wires and cables, copper, brass, bronze, and other copper alloys in such forms as sheet, plate, tube, pipe, rod, wire, forgings, stampings, extrusions, flexible metal hose and tubing.



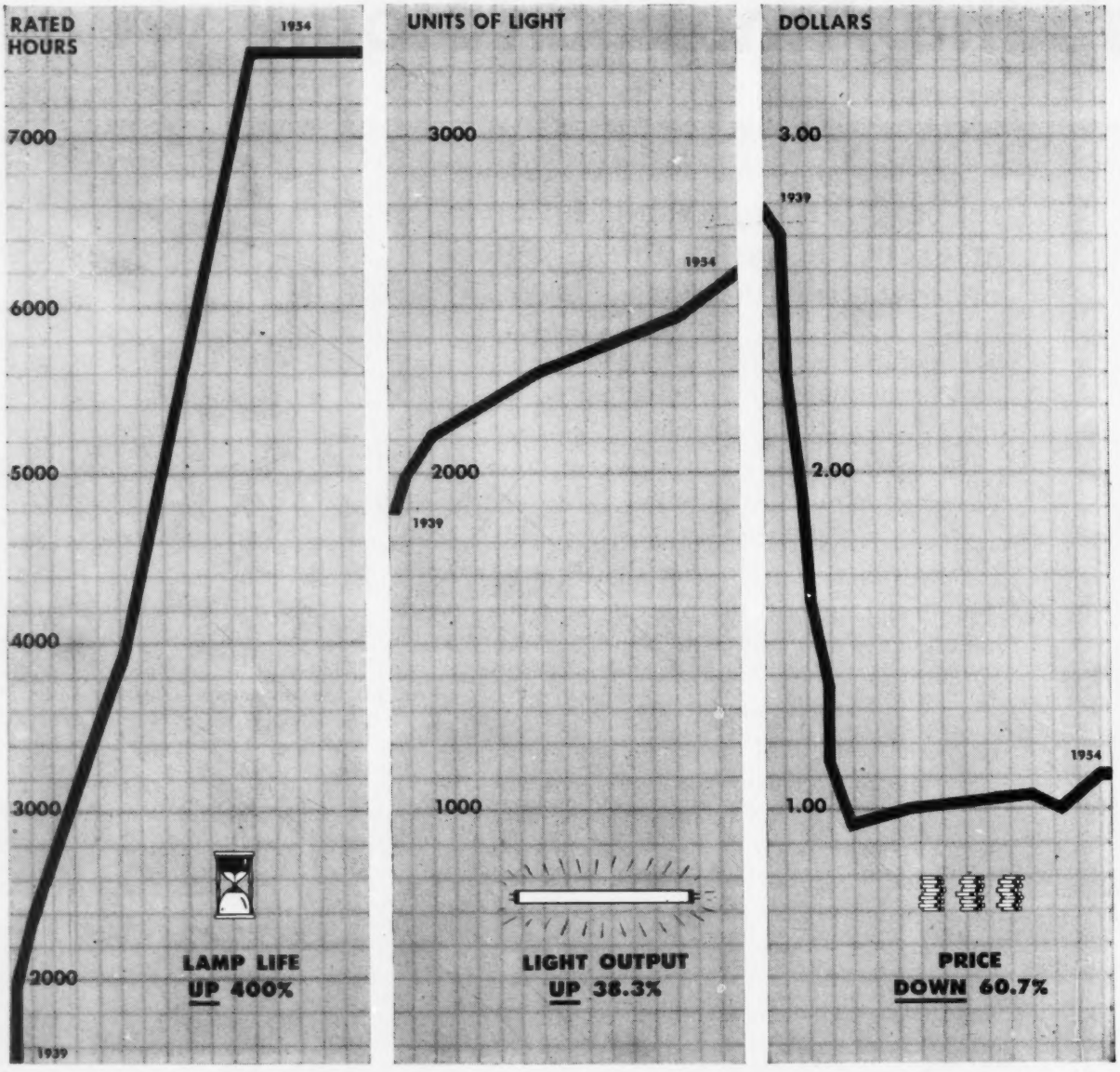
YOU CAN SEE WHY FORMBRITE'S BETTER. At the left is a 75X magnification of the grain structure of ordinary drawing brass, used for years in the production of stamped and drawn products. At the right is a 75X magnification of Formbrite. Note the superfine grain structure that gives Formbrite its superior qualities. Want to know more about this cost-saving metal? Address: The American Brass Company, General Offices, Waterbury 20, Connecticut.



WORLD'S MOST COMPLETELY ELECTRIFIED FARM. The Farm Journal and Pennsylvania Power & Light Company chose this farm near Harrisburg, Pa., to show what electricity means to farm families in the 75th anniversary of the electrical industry. From barn to kitchen—it's fitted out with modern electrical equipment and wiring. In the all-electric barn that contains calf pens and farm workshop, the wiring is Underwriters' approved, thermoplastic-insulated Durall-T, made by Anaconda Wire & Cable Company. This easily installed wire resists hot, acid, moist barn atmospheres.

54280

YOU EXPECT THE BEST VALUE FROM G-E FLUORESCENT LAMPS



16 times more value for your fluorescent lamp dollar than in 1939

Today you don't have to pay more than $1.10 for the finest fluorescent lamp made: General Electric. Fifteen years ago it would have cost you $2.80 or $1.70 more. And while price has been going down, we've been pushing quality up. General Electric has upped light output 38%, increased lamp life 400%.

In terms of what you really judge lamps by, a General Electric 40-watt fluorescent lamp that lists at $1.10, plus tax, today is a *16-times bigger value than it was in 1939.*

For further information, contact your G-E lamp supplier or write to Lamp Division, General Electric, Department 166-US-9, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ELECTRIC

FROM THE NATION'S CAPITAL

Tomorrow®

A LOOK AHEAD

Newsgram®

24th and N Streets, N.W.
Washington, D. C.

The Eisenhower formula for political success seems not to be working so well; seems to be heading for trouble in this off-year election.

Ike's formula: Start by accepting the Democratic Party as the majority party. Strive to win Democrats to the Republican side by going down middle, by avoiding strong attack, by doing better what Democrats had done.

Result: In Maine general election, Republican vote barely held its own; Democratic vote soared. In primary elections in many States, in registration of voters, Democratic strength relative to Republican is up, not down.

Take Maine, a rock-ribbed Republican State, as an example.

In total vote for House seats: Republicans polled 156,000 in 1952 and 131,000 this year. That's down 25,000. Democrats polled 77,000 in 1952 and 108,000 this year. That's up 31,000. The Ike formula wasn't working well.

Look at it another way: In per cent of total vote: Democrats gained 2.1 percentage points compared with 1950 and 11.7 points compared with 1952 in House races. Democrats gained 5 percentage points compared with 1946--the last off-year race--and 4 points compared with 1952 in the Senate race.

The Senate, with a 4 per cent Democratic gain in vote over the nation, would show this line-up: Democrats, 51. Republicans, 44. Independents, 1.

The House, with a 2.1 per cent Democratic gain nationally, would show this line-up: Democrats, 228. Republicans, 206. Independent, 1.

To win, Republicans need a formula that will pick up, not lose, votes.

The Taft formula differed from Ike's formula. It was this:

Be yourself. Do not copy the Democrats. Organize intensively. Go on the attack. Draw to the polls the normally lethargic, stay-at-home citizens. Avoid divisions within the party and tilt the balance by seeking votes on forthright issues that make a dent on those who usually do not vote.

Result: In 1950 in Ohio, Taft won by 431,000 votes.

If Congress does go Democratic in 1954 elections, remember this:

A conservative coalition will rule. Republicans, in a minority, will be forced to work together, to avoid division. Democrats, in power will tend to divide on issues, will fight among themselves on policy.

Republicans plus conservative Democrats again will rule.

A White House veto, in addition, will stand in the way of new laws that might be designed to cause trouble for the party holding the Presidency.

A Democratic Congress, in other words, would not mean a return to a dominant role of labor leaders in the making of policy.

 (No part of this or any other page may be reproduced without written permission)

Outlook with Democratic Congress, Republican President would be this:

Taxes: Probably no change. Any new tax cuts favor lower-income groups. Tax changes already made, favored by businessmen, would not be changed. Public power: More chance of expansion, less of contraction. Labor laws: No real change from now. Social Security: Trend will continue toward bigger benefits for more people, as it has under both Republicans and Democrats.

Farm price supports: More likelihood of high supports. Foreign aid: No change. Antitrust: No change. Spending: It will remain high.

Basically, a Democratic Congress will mean a little more bias on the side of mild inflation, a little more willingness to accept an unbalanced budget indefinitely, a little less resistance to the trend toward bigger and bigger Government, toward more subsidies for more people.

It's very doubtful if Ike can balance his budget in his first term.

Deficit record is this: First year, 9.4 billions (a Korea holdover). Second year: 3 billions. Third year, 4.7 billions, officially estimated. Fourth year, down to maybe 2 or 3 billions at best, through military cuts.

Debt, in other words, is rising under Republicans as under Democrats. Debt reduction, talked about in the past, remains a long-range goal.

In Ike's latest budget: Military spending is down, civilian up.

Subsidy trend is up, too. Idea that farm price subsidies are biggest subsidies, however, is not supported by the official figures.

Among some subsidies: Farm price subsidy: 420 million dollars for the year ended July 1. Foreign-aid subsidy: 4.7 billion in same period.

Mail subsidy: 462 millions. Highway subsidy: 531 millions in aid to States. Relief subsidy to States: 1.4 billions. Veterans' subsidies of various kinds: 3.3 billions. There are other big subsidies, too.

Tendency continues to be for subsidies to grow, not to contract.

We can give you, on best authority, this report on war outlook:

Quemoy: U.S. Navy or Air Force will not intervene in event of attack by Chinese Communists. Chiang Kai-shek's Nationalists must do the fighting. U.S., likewise, will not assume responsibility for direct supply of Nationalist forces on Quemoy. U.S. is delivering supplies on Formosa.

Tachen islands: Same thing. No U.S. direct involvement.

Formosa: U.S. Navy and Air Force will defend this big island and the Pescadores islands near by if attack comes. Defense may involve attacks on any invasion bases on the China mainland. Marines and GI's, however, will not be called upon to fight for Formosa if an invasion attempt comes.

China mainland: No present U.S. interest in attacking. U.S., though, did give the go-ahead signal to Chiang Kai-shek's Air Force to attack bases on the mainland of China where invasion forces are building up.

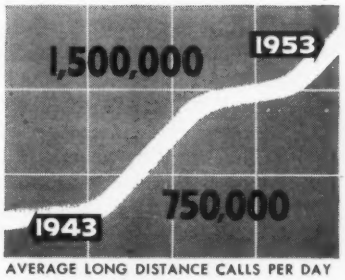
U.S., with 400,000 American youths exposed in Europe, is trying now to do two things: (1) reassure and help Germany's Chancellor Adenauer, who wants to be helpful in building Europe's defenses; (2) show some coolness toward France's Mendès-France, who inclines to upset the defense applecart. U.S. is not so inclined to supply more billions to try to hold French co-operation.

France, in other words, is given a chance to make the next move.

 (No part of this or any other page may be reproduced without written permission)

Look what happens during an average day

... in 5,100 Independent Telephone Companies across the land.



AVERAGE LONG DISTANCE CALLS PER DAY
for Independent Telephone Companies

● 100,000 employees at 11,000 exchanges keep telephone lines humming 'round the clock. ● 35 million local calls are made over 9 million Independent telephones. ● Operators at busy switchboards complete as many as 1,500,000 long distance calls. ● More than $300,000 worth of new telephone equipment and plant facilities are added to growing Independent companies. ● Every minute of the day, another Independent telephone is placed in service.

Any way you look at it ... by the day ... by the month ... by the year ... the 1½ billion dollar Independent Telephone Industry is one of this country's fastest growing businesses!

• Telephone instrument in photograph above manufactured by Automatic Electric Company, Chicago, Illinois.

USITA

United States Independent Telephone Association

Pennsylvania Building : Washington, D. C.

Washington Whispers®

[What appears on this page is reported in Washington and other news centers]

"Citizens for Ike" Losing Favor . . . Churchill Shies From General Election . . . Mamie Tired of White House?

Sherman Adams, White House staff chief, is on the political defensive after the Republican setback in Maine. White House strategy for 1954 is to strike down the middle on issues, hoping to attract Democratic votes. In Maine, Democrats stayed Democratic and many Republicans stayed home.

★ ★ ★

Leonard Hall, Chairman of the Republican National Committee, is to be given a freer hand in remaining weeks of the 1954 campaign. Republicans had placed great store on a special organization known as National Citizens for Eisenhower Congressional Committee to supplement the regular party organization and to win normally Democratic votes. Early results are raising questions about the wisdom of having rival organizations.

★ ★ ★

Ezra Benson, Secretary of Agriculture, called off plans for drastic control of farm crops in 1955 after getting word from the summer White House in Denver. Farm-State Republicans became alarmed at farmer reaction to Government plans to tell them what they could and could not plant on acres taken out of production of crops with price supports.

★ ★ ★

At the summer White House, word from political scouts is that Republicans are going to have a hard time defeating veteran Democratic Senator Guy Gillette in normally Republican Iowa. In fact, the advice to Mr. Eisenhower is that, as of now, Senator Gillette would be re-elected.

★ ★ ★

Representative George Bender, running for the former Taft seat in Ohio, may be lucky to win by 50,000 votes over Senator Thomas Burke, appointed Democrat, on the basis of information from Republican sources reaching the summer White House. The late Senator Robert Taft won by 431,000 in 1950.

★ ★ ★

Maj. Gen. Wilton B. Persons, top White House liaison man with Congress, is beginning to carry more weight in top political councils. General Persons all along has advised Mr. Eisenhower that he should head off a fight between so-called "liberal" and "conservative" Republicans. Advice to avoid a fight involving Senator Joseph McCarthy was not taken.

★ ★ ★

Mrs. John S. Doud, the President's mother-in-law, is telling close friends that she does not think Ike will run for another term. She explains that Mamie Eisenhower, as First Lady, is under such pressure that she does not feel she should try another four years.

★ ★ ★

The President hears that party feuds in three States are giving Republican leaders concern. A Nixon-Knowland division in California remains troublesome. In New Jersey, conservatives still are dissatisfied with Clifford P. Case, the party senatorial nominee. In Illinois, the Citizens for Eisenhower group remains rather cool to Joseph T. Meek, the nominee.

★ ★ ★

Joseph McCarthy, Wisconsin Senator, fully expects that the Senate committee considering charges against him will make a report to the Senate that can be the basis of a vote of censure. It is being taken for granted, however, that the Senate will not come back to Washington to receive the committee report until after election.

★ ★ ★

Important Cabinet changes will follow if the Republicans do lose in the November elections, barely six weeks away. A defeat would lead to shifts in policies and in top personnel, with an eye to 1956.

★ ★ ★

President Eisenhower is under pressure in Denver to move headquarters of the Forest Service and the Reclamation Bureau from Washington to that city. A Federal Government pay roll is viewed with favor.

★ ★ ★

Sir Winston Churchill and the British Conservatives are inclined now to put off a general election in Britain until late 1955 or even until 1956, because of concern over political trends in Britain. Polls and scattered elections suggest that voters are not necessarily happy when prosperous.

★ ★ ★

President Eisenhower turned thumbs down on a proposal that the U. S. deliver supplies, arms and troops to the island of Quemoy, within gunshot of the Communist-held mainland of China. The U. S. commitment is limited to supply and defense of the big island of Formosa and the Pescadores islands close by.

★ ★ ★

Konrad Adenauer, Chancellor of West Germany, sent a hurry call for John Foster Dulles, U. S. Secretary of State, after a visit by Britain's Foreign Secretary, Anthony Eden. Eden is trying to sell a watered-down version of German sovereignty and rearmament that involves political trouble for the German Government.

★ ★ ★

Britain's Foreign Secretary Eden is trying to play the traditional British role of middleman and broker in working out some arrangement for building a firm defense of Europe. By being in the middle, the British try not to become too deeply involved.

FACT

New Gilfillan GCA Quadradar only complete, efficient, lowest-cost, best-proven, lightweight radar traffic control system available today!

PROOF

Check these exclusive and vital advantages:

- ☐ *Only* the Gilfillan GCA Quadradar provides *all four* important airport traffic control functions—surveillance, final approach, height-finding and airport taxi—in a single, lightweight one-scope equipment.
- ☐ All the Gilfillan GCA Quadradar advantages are already built in and proven. The price will not increase because of need for new designing, delays for "debugging" or the need for further proving. And the new equipment costs less than other lightweight one-function radars!
- ☐ *All* controls, both electronic and mechanical, are *remoted* to operator console. At the turn of a switch, the operator selects any of four radar displays within five seconds!
- ☐ Instant multiple runway coverage at the turn of a switch. Both antennas rotate electrically through 360°. No need to go out to the field to realign the entire equipment. Surveillance antenna tilt through 10° is also controlled remotely.
- ☐ Operates on 50 or 60 cycle power. Sets up, ready to operate within 2 hours.
- ☐ 20 mile range on final approach. Operator can switch, in seconds, to 10 mile display as aircraft comes in.
- ☐ Linear or logarithmic range marks and either fast or slow scan. Operator can switch, instantly, to logarithmic sweep and fast scan for greater precision during final critical approach miles.
- ☐ Surveillance display and airport taxi display can be off-centered instantly, giving maximum range in any desired direction.
- ☐ Provides widest angle of coverage with 30° in azimuth and 30° in elevation. Operator can also select either 30° or 7° elevation coverage.
- ☐ Circular polarization, eliminating rain or snow clutter, is already included in basic equipment.
- ☐ Completely flexible; operable without modification in a truck, on the field or in a building.

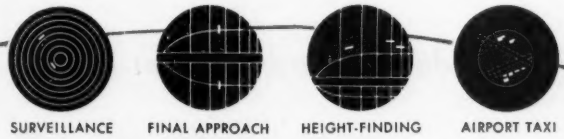
PROVEN PERFORMANCE
GUARANTEED DELIVERY

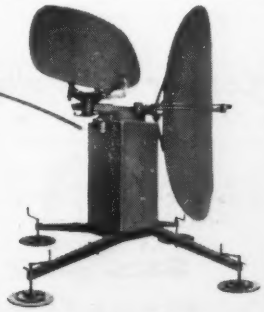
Only the Gilfillan GCA Quadradar can bring the known reliability of components already proven under most adverse conditions in world-wide service. Built by the company with by far the greatest experience—builders of 500 GCA equipments.

Maintenance and training do not present new problems. Components are interchangeable with current GCA equipments now in operation in 28 countries around the world. Experienced GCA operators and maintenance personnel need only a few minutes further instruction.

Only Gilfillan provides field service through 200 Gilfillan technical experts located throughout the world.

Only Gilfillan offers a firm, low price on a superior, already-proven, in production, complete 4-way radar *now;* and a firm delivery date (10 months from date of order) backed by Gilfillan's unmatched record of on-time delivery.





Gilfillan

LOS ANGELES

Plenty of Copper...

today and tomorrow

The assurance that copper is in abundant supply and *can be used without restrictions* is the "go ahead" for industry. You can now rate PERFORMANCE over AVAILABILITY when choosing materials. By using copper and its alloys, brass and bronze, your product is easier to fabricate, better and more durable.

We can get more copper than we now have. Although industry and government have been consuming more copper than in any previous peacetime period, production has kept pace with this increased demand. And producers are not working at full capacity!

More copper keeps on coming. Eleven major new projects in the U. S. will start producing in the next 3 years. These mines will add 250,000 tons to our annual production—more than *¼ of all the domestic copper mined during 1953*. In addition, recent improvements in mining techniques now make it possible to obtain copper from ores considered commercially unworkable in the past.

Copper is virtually indestructible. At least 3 out of every 4 pounds of copper used in today's products, when scrapped, can be re-used in the future. Every day we are adding to our "copper capital". The more copper we use . . . the more we have!

Copper or its alloys provide these advantages . . .

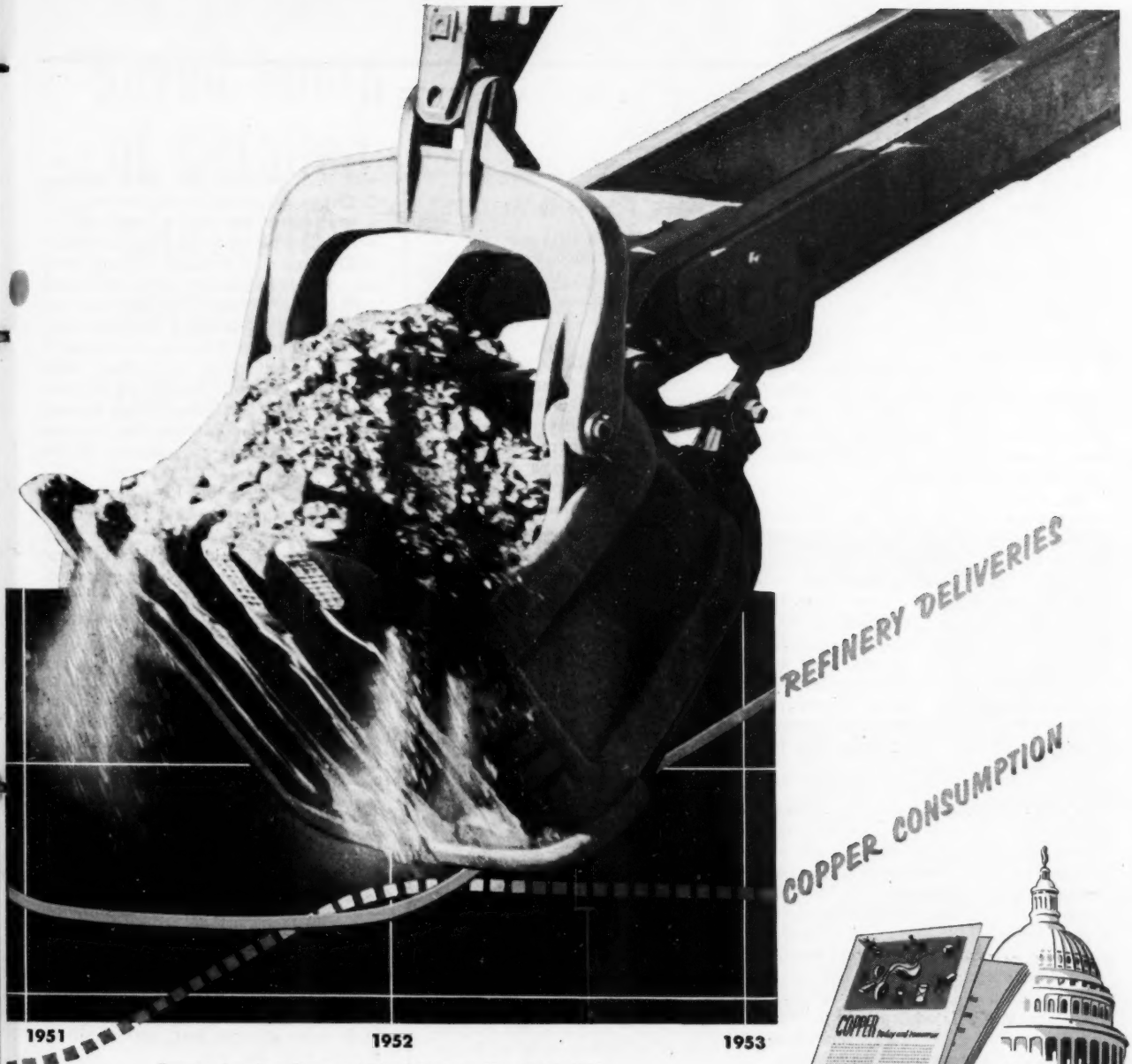
Best conductor of electricity commercially available.

Does not rust . . . high corrosion resistance.

Best heat transfer agent of all commercial metals.

Easy to machine, form, draw, stamp, polish, plate, etc.

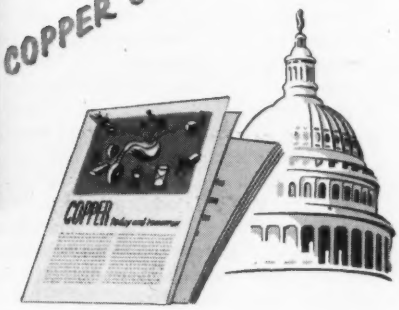
Welds readily . . . excellent for soldering and brazing.



Source—American Bureau of Metal Statistics Year Book 1953

Copper has a new ability to serve you. Many of your problems are being solved in the laboratories of the copper and brass industry. Whether it's a new alloy, a different temper or a special property . . . copper can help you develop new ideas. Copper can bring old methods up to date. Call a supplier of copper and brass and convert your thoughts to action!

COPPER & BRASS
Research Association



✻ ***"Copper . . . is fortunately available in ample supply to meet any foreseeable demand"***

Foreword, U. S. Dept. of Commerce
B.D.S.A. Copper Quarterly, August 1954

For information about U. S. copper supplies including free copies of this Government report and the new booklet, "Copper . . . Today and Tomorrow", send attached coupon to:

Copper & Brass Research Assn., Dpt. B
420 Lexington Ave., New York 17, N. Y.

NAME .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

PEOPLE ★ ★ ★

OF THE WEEK

› **NEW GOVERNOR** of Maine is to be a Democrat, **Edmund S. Muskie,** the first of his party to win that office since 1934. Whether or not his upset victory signifies a political trend, it will affect campaigning in the rest of the nation; Republicans feel that they need to intensify their efforts if they are to hold control of Congress.

The victory revealed Mr. Muskie as an astute political careerist. He determined while in college to have a political future, sensed last winter that the time was ripening for his big bid and began reviving party organization.

Mr. Muskie, only 40 now, opened a law practice at Waterville, Me., shortly after leaving Cornell University Law School in 1939. Three years as a naval officer interrupted his plans, but in 1946 he won the first of three terms in the State Legislature, resigned in 1951 to direct the Office of Price Stabilization in Maine, quit that a year later to accept election as a Democratic National Committeeman. The young Governor-elect is likely to be a power in Maine's Democratic politics for a long time to come.

› **A NEW SENATOR** is certain for New Hampshire. Chances are, after last week's primary election, that he will be **Norris Cotton,** a pro-Eisenhower Representative who beat Senator Robert W. Upton for the Republican nomination in a three-way contest. And in New Hampshire, the Republican nomination means almost certain election.

Mr. Cotton, a lawyer, is 54 and has spent almost all his adult life in politics as a prosecuting attorney, municipal judge, State legislator and Congressman. He got early training in Washington in the late 1920s as secretary to Senator George H. Moses (who was President pro tem of the Senate), first came to Congress in 1947 when Republicans took control of both houses for a session.

New Hampshire was one of the early seedbeds for the Eisenhower boom for the Presidency, and Mr. Cotton was one of the General's first New Hampshire supporters. In Congress he has supported most Administration measures except Hawaiian statehood and the 140,000-unit public-housing program.

› **TROUBLE WATCHER** for the U. S. on Quemoy, where Chiang Kai-shek's troops were trading bombardments with Communists last week, is the man who supervised re-equipment of Chiang's Army with U. S. weapons, **Maj. Gen. William C. Chase.** He turned up on Quemoy only a week after two of his staff officers were killed there by Communist shells while inspecting defenses against invasion. His headquarters are on Formosa.

An old cavalryman, General Chase has headed the U. S. Military Assistance Advisory Group on Formosa ever since it was first sent there, more than three years ago. He calls himself a "military coach" and let the Chinese know as soon as he arrived on Formosa that he was not there to lead an invasion of the mainland, just to build defenses.

General Chase joined the Army shortly after graduation from Brown University, served in France in World War I, in the Pacific in World War II. The First Cavalry Division, which he commanded, was in the forefront of Pacific campaigns —first to enter Manila when it was recaptured, first to enter Tokyo.

› **HENRY CABOT LODGE, JR.,** is to have his hands full for a few weeks countering Russian moves in the United Nations session that is just beginning. One thing that keeps him busy is his standing rule of counterattack: Always speak the same day that a Communist does, so that the U. S. view does not get lost in the shuffle but is presented in time to counteract Red propaganda.

Ambassador Lodge, like his famous Senator-grandfather, was an isolationist but decided during World War II that he was "100 per cent wrong," now is an ardent supporter of the United Nations. As a Senator over a period of 16 years, he opposed aid to Britain before U. S. entry into the war, backed aid to Europe after the war.

In this U. N. session, two of the major issues are to be U. S. complaints against the way Soviet planes shoot down U. S. planes, and U. S. efforts to keep Communist China out of the U. N. Another item on which Mr. Lodge can be expected to attack: forced labor in Communist countries.

› **BUSIEST MAN** in Washington—"We're just swamped," he says—is an Assistant Attorney General, **William F. Tompkins.** His job is to carry out last week's promise of Attorney General Herbert Brownell, Jr., to "utterly destroy the Communist Party" in the United States. Mr. Tompkins was handpicked for the task last May when the Justice Department set up a new Internal Security Division and

(Continued on page 18)

THREE FOR THE SENATE?

› **WINNERS** in primary elections last week are three men—two State officials and a lawyer—who hope to gain U. S. Senate seats.

Val Bjornson, a Republican, is trying to unseat Senator Hubert H. Humphrey in Minnesota. Mr. Bjornson, 48, is State Treasurer, formerly was a newspaper editorial writer and radio commentator. He is an Eisenhower supporter, with a few reservations about the Administration's farm program. Mr. Bjornson, said to have an uphill fight ahead, is to meet Mr. Humphrey in two debates.

BJORNSON

Foster Furcolo, 43, a Yale-educated lawyer, is challenging Senator Leverett Saltonstall in narrowly divided Massachusetts. Mr. Furcolo, a Democrat, includes in his campaign themes a charge that Republican economies in the Weather Bureau and the Coast Guard hampered early warnings of Hurricane Carol. Mr. Furcolo was elected to Congress in 1948 and 1950 but resigned during his second term to accept appointment as State Treasurer.

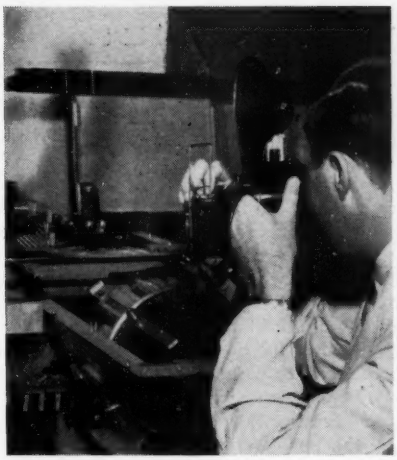
FURCOLO

John A. Carroll has the job of holding Senator Edwin C. Johnson's vacated seat in Colorado for the Democrats. In the primary, he campaigned as a "Fair Dealer" with a pro-Truman record compiled during two terms in Congress, 1947 to 1951 now must beat a pro-Eisenhower Republican, Lieut. Gov. Gordon Allott. Mr. Carroll, 53, worked as a policeman to get through law school, now is a Denver attorney.

CARROLL

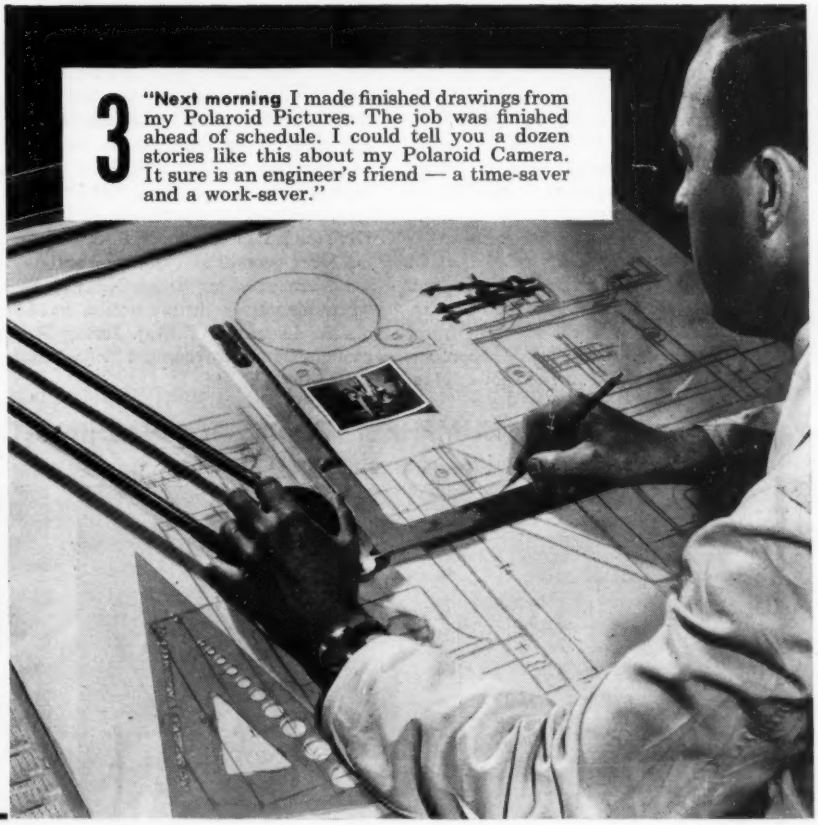
"Saved hours of detailed sketching with three 60-second photos"

— Says Engineer Don Johnson
Lever Bros., Cambridge Office



1 **"I had to redesign** this machine fast to avoid a shutdown. Blueprints weren't available. I flew to our New Jersey plant and instead of making detailed sketches, took 60-second photos with a Polaroid Camera.

2 **"I checked my pictures** for detail as fast as I took them. Then I jotted notes and dimensions on the back of each print — made a couple of rough sketches — and was heading back to Cambridge that afternoon.



3 **"Next morning** I made finished drawings from my Polaroid Pictures. The job was finished ahead of schedule. I could tell you a dozen stories like this about my Polaroid Camera. It sure is an engineer's friend — a time-saver and a work-saver."

This story is only one of the countless ways Polaroid Cameras are at work for business and industry. No matter what your business, 60-second pictures can help you on the job. Attach them to reports to save time and lengthy descriptions. Use them in job instructions . . . as proof in damage claims . . . to help you show work progress . . . to illustrate products for sale. The pictures are beauties — reproduce perfectly in literature or catalogs.

With the Polaroid Camera, you can take the picture, check it on the spot to make sure it's just right, and put it to work — all in a matter of minutes. And all this with a camera that's a cinch to use, inexpensive to buy and operate. It's little wonder the camera is at work in more than 600 different fields, and is the most widely used camera in business and industry today!

Read how you can use this camera in the big free book offered below.

POLAROID CORP., Dept. U-S 2, Cambridge 39, Mass.

FREE BOOK: Please send "How to make Polaroid 60-second Cameras work for you." Fully illustrated.

Name_____

Firm Name_____

Your Title_____

Street Address_____

City_____ State_____

Polaroid® *Land* Cameras

Polaroid Corporation, Cambridge 39, Mass.

plucked him out of a U. S. district attorney's post in New Jersey to run it.

Mr. Tompkins has a Supreme Court test on his hands trying to make Communists register under the 1950 Internal Security Act. In process also are more prosecutions for conspiracy to advocate overthrow of the Government. New laws to outlaw Communists are on the books, and still more future cases are shaping up from evidence to be given by Communists in exchange for immunity from trial.

Hard work is no stranger to Mr. Tompkins. As U. S. prosecutor of gangsters and dope peddlers in New Jersey, he worked 10 to 12 hours a day, often stayed at the job nights and week ends. He got into politics by serving three terms in the New Jersey State Assembly.

› **AN H-BOMB BACKER** who also has found peacetime scientific uses for the atom is to be a new member of the five-man Atomic Energy Commission. The new man, **Dr. Willard F. Libby,** will succeed Dr. Henry D. Smyth, a commissioner who once lined up with Dr. Robert Oppenheimer in opposing "crash" development of the hydrogen bomb.

Since 1950, Dr. Libby has been one of nine scientific consultants on the AEC's General Advisory Commission, the same kind of advisory job from which Dr. Oppenheimer was suspended. Dr. Libby stood alone against other GAC members in 1951 when GAC turned down plans for a new laboratory to develop the H-bomb more swiftly.

Dr. Libby, 45, tall, slow-spoken, amiable, received a Ph.D. in chemistry from the University of California in 1933. During the war he helped develop processes for deriving explosive material from uranium. Since the war he has achieved renown for discovering an "atomic time clock" to date ancient events accurately by studying radioactivity in various specimens. Dr. Libby gives up a post in the Institute for Nuclear Studies at the University of Chicago to take his new job, which pays $18,000 a year.

› **BRIG. GEN. RALPH W. ZWICKER,** a key figure in disputes over actions by Senator Joseph R. McCarthy (Rep.), of Wisconsin, is to start a new military assignment, now that Senate hearings on the disputes are over.

The General was cited in World War II for "exceptionally meritorious service" and "sound professional knowledge in his staff supervision" of the Second Infantry Division during the final six months of campaigning in Germany. Since the war, he has attended the National War College, commanded a regiment of the First Division in Germany. He was made a brigadier general in 1953, soon afterward took command of Camp Kilmer, N. J., where his part in the promotion and honorable discharge of Maj. Irving Peress brought him into conflict with Senator McCarthy.

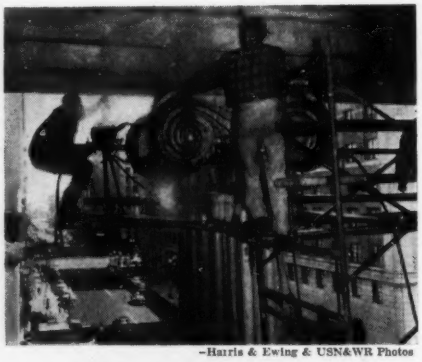
Now he is to go to Japan, where he is assigned to headquarters for U. S. Forces in the Far East just outside Tokyo. His orders call for him to report to Travis Air Force Base, California, ready to leave by air after September 27. Department of Defense says his transfer is "routine."

› **A REBELLIOUS GENERAL,** backed by an Army of 266,000 regulars, is trying to install a "strong" regime in the non-Communist southern half of Indo-China, split by last month's armistice. The General, **Nguyen Van Hinh,** insists that kind of Government is needed to keep Communists from taking over the whole country in next year's elections.

Army defiance of Premier Ngo Dinh Diem shows that the Army is in politics up to its ears in a country that is just beginning to try to govern itself. Chances that a stable Government can be set up without a bloody showdown seem dim. A fight between non-Communist factions would be right down the Communists' alley.

The General, a young and ambitious man, is regarded as pro-French. He is a graduate of the French Air Academy, served in French forces in Africa and Germany for several years, later became an air intelligence officer in Indo-China. His father is a former Premier of a French colonial government of Indo-China and the General is a close friend of Gen. Paul Ely, French commander in chief.

MR. HUMPHREY COMES TO WASHINGTON, CLEANS UP

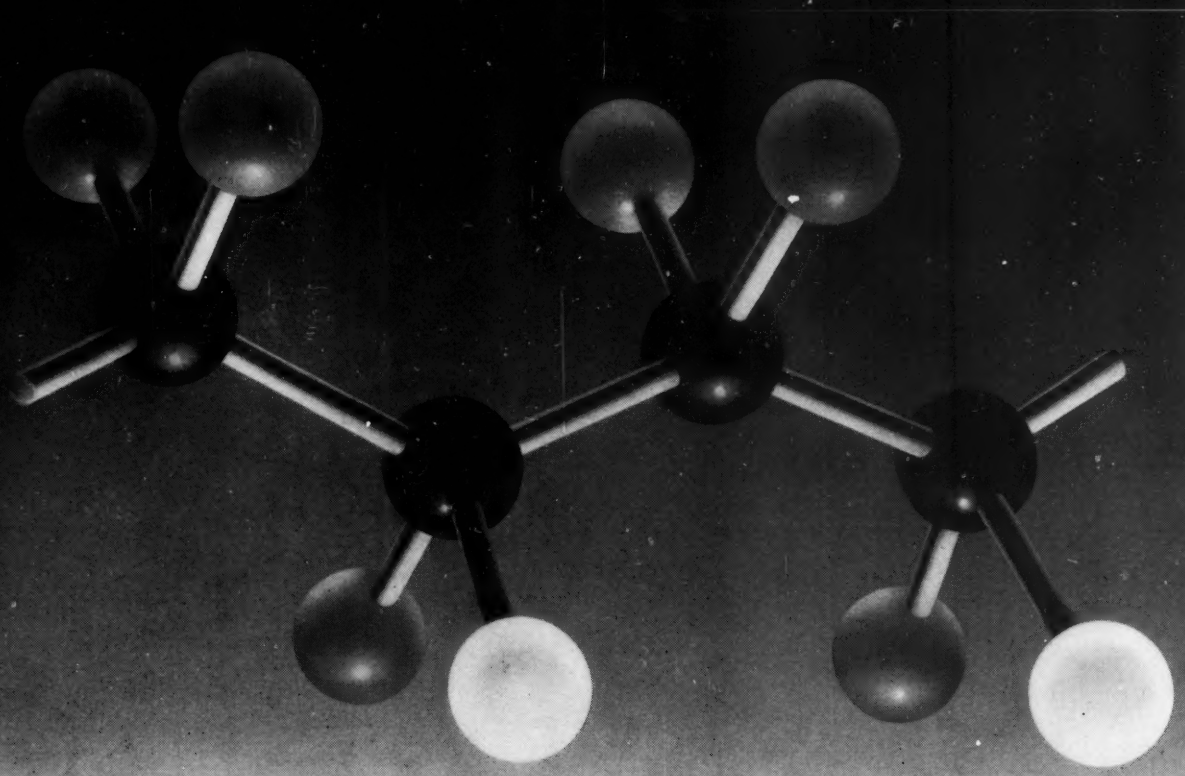


–Harris & Ewing & USN&WR Photos

› **GEORGE M. HUMPHREY** (center), Secretary of the Treasury, is batting in clean-up position for the Eisenhower team in getting sooty grime and bird wastes off the pink-granite Treasury Building.

Decision to clean up was made by Mr. Humphrey one morning 18 months ago while walking back to his soiled domain after a White House conference. Cleaning contracts totaling $50,000 now are showing results. The Treasury (left) was partly clean, partly dirty last week while workers (right) kept blasting with steam. Electrical devices are being installed to shoo hordes of starlings from Treasury-ledge roosts.

The building had not been cleaned since Andrew Jackson gave orders to build it in 1836.



Thermoplastic Thoroughbred

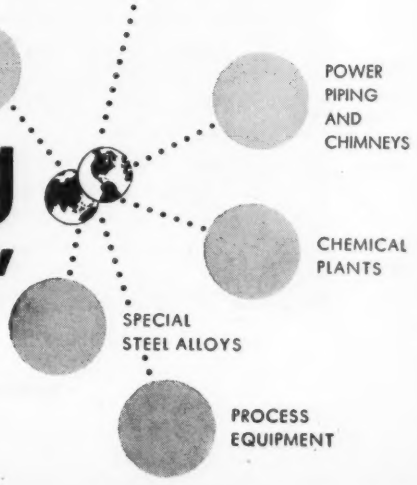
Its name is KEL-F® . . . truly a top performance offspring of fluorine and carbon, and a triumph for scientists who mated these two molecular opposites into a thermoplastic material that is readily molded, machined, or fabricated.

M. W. Kellogg's KEL-F is unique among all thermoplastics. It is impervious to moisture, inert to practically all chemicals, exceptionally high in dielectric strength, and stable at temperatures ranging from —320°F. to +400°F. As a result, KEL-F is specified for scores of chemical and electrical uses where other materials, including other plastics, do not last. It is the basis for many new product developments.

In its operations as the world's leading designer and builder of petroleum refineries and other complicated chemical processing plants, The M. W. Kellogg Company has developed many special materials, techniques and processes to help you in your future plant or product planning. Our technical service department welcomes your inquiries.

CHEMICAL MATERIALS

® *Registered trade-mark for The M. W. Kellogg Company's fluorocarbon polymers*



M.W. Kellogg

ENGINEERING FOR TOMORROW

THE M. W. KELLOGG COMPANY, NEW YORK 7, N. Y.

The Canadian Kellogg Company, Limited, Toronto • Kellogg International Corporation, London.

SUBSIDIARIES OF PULLMAN INCORPORATED

STYLES HAVE CHANGED IN DRY CLEANING, TOO!

If you have a dinner date tonight, or a party, and the suit you want to wear is soiled . . . don't worry about it, if you have as much as an hour or two. There's probably a quick-service cleaner nearby. And chances are he'll use Perchlorethylene—a relatively new and highly efficient solvent—to make your clothes clean as new in a jiffy.

Today, fast service cleaning is big business in America. The latest count is 3,358 shops and the number is continually increasing. Modern living, with its larger wardrobes of light-colored clothes and improved ideas of cleanliness, has demanded this new industry. The ability of cleaners to furnish speedy service is dependent largely upon Perchlorethylene and on the cleaning equipment designed to handle this solvent.

Perchlorethylene saves you time, and it is kind to your clothes. The dry cleaner likes it too because it enables him to give you super-service, and because its nonflammable qualities enable him to secure more favorable locations for his shops.

Columbia-Southern® is a leading manufacturer of Perchlorethylene, as well as other chemical specialties derived from the basic production of chlorine and alkalies.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

CHLORINE, ALKALIES AND RELATED PRODUCTS • OFFICES IN PRINCIPAL CITIES

VOLUME XXXVII—No. 13 U.S. News & World Report WASHINGTON, D. C.

MAINE ELECTION— NATIONAL TREND?

If It Is, Democrats Will Win House and Senate

The real story of the Maine election—and what it means—can be told now.

Facts are obscured by political claims.

For a comprehensive analysis, *U. S. News & World Report* sent a member of its Board of Editors to talk with informed people, including political leaders, on the spot.

These are conclusions reached by insiders in both parties:

Maine is a bad omen for Republicans. To put Republican candidates over, it is not enough to plug the Eisenhower program. Votes turn mainly on local issues. Democrats are gaining, Republicans slipping.

PORTLAND, Me.

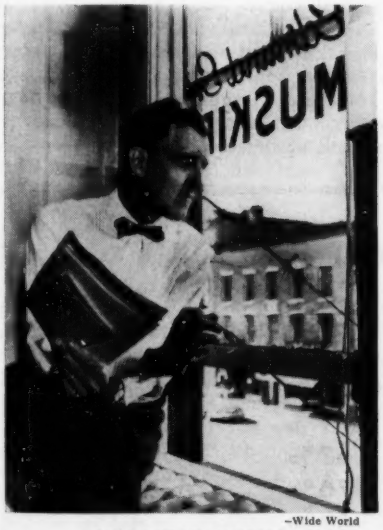
If Maine is an indicator, the Democrats are going to take control of Congress in 1955.

Republican votes in this early-balloting State tend to move up and down in line with the party's national pulling power. This month, the Republican vote in Maine went down quite sharply.

Loss of Republican strength was felt in all important contests in this final election, nearly two months before Election Day in the other States, November 2.

In races for the three seats in the U. S. House of Representatives, Maine Republicans won re-election, but with the smallest margin since 1934. The Democratic share of the vote grew from 42.4 per cent in 1950 to 44.5 per cent this year. Figures for each district are given in the table on page 22.

If the Democrats gain as much in other parts of the country, they will pick up 13 seats and control the House. In the Senate race, the Democratic candidate, while losing, got nearly 42 per cent of the major parties' vote, compared with a little more than 37 per cent in 1952. This gain, if realized across the nation,



—Wide World

DEMOCRAT MUSKIE

—Talburt from Scripps-Howard Newspapers

"AS MAINE GOES!"

Deep in Republican territory, signs of trouble

—United Press

REPUBLICAN SMITH

would mean 4 more Democrats in the U. S. Senate.

Thus, the Republicans stand to lose control in both houses of Congress, if they lose votes elsewhere as badly as they lost votes in Maine. The prospects are analyzed in the boxes on page 23.

Instead of getting a Congress that will give him more support, as he is urging in the campaign, President Eisenhower stands to get one that will be less interested in his program, more interested in paving the way for a Democratic victory in 1956.

This is a danger the Republicans are now more worried about. Of course, it is also putting new pep into the Democrats.

Judging by the Maine results, the voters are not responding to political talk the way either party figured.

Republican strategy, based heavily on Mr. Eisenhower's personal popularity, is not working. The idea of the party leaders is to appeal for a vote of confidence for the Republican Administration, based largely on peace in Korea, lower taxes, bigger welfare programs and a crackdown on Communists.

The national appeal is intended to lift the voters' sights above local matters. It is these local problems that make it hard for the party in power to hold its own in the mid-term election. Normally it loses seats in Congress; this time the balance in both houses is so nearly even that the Republicans can't lose seats without also losing control.

The Republican problem in Maine was the unpopularity of Governor Burton M. Cross, who was seeking his second term. To counter this, the party preached: "Vote the straight Republican ticket." Congressional condidates plugged the Eisenhower Administration and asked for a general victory as a vote of confidence. But the appeal fell flat.

The President's popularity is not carrying over to the party, judging by the Maine vote.

In 1952, the President pulled 232,000 votes in Maine. That is almost as many as the combined votes of both parties this year, as shown in the table on page 23.

This means there are many people who voted for Mr. Eisenhower in 1952 who are not turning out to vote for the Republican Party in 1954; some of them are just staying home.

Party loyalty is not keeping Republicans in line when they do vote.

Many Republicans voted for one party for Senator and a different one for other posts. In Cumberland County, which includes Portland, 2,000 voters marked their ballots for the Republican Senator and for the Democratic candidate for U. S. Representative; 4,000 marked their ballots for the Republican Senator and for a new Democratic Governor, Edmund S. Muskie.

How Major Parties Divide Maine's Vote

Percentage of vote for Governor

	Republican	Democrat
1932	49	51
1934	46	54
1936	57	43
1938	53	47
1940	64	36
1942	67	33
1944	70	30
1946	61	39
1948	66	34
1950	61	39
1952	61	39
1954	45	55

Many Republicans also crossed party lines and voted a straight Democratic ticket. This was apparent in the farm vote in the northern part of the State.

Aroostook County, strongly Republican, went for Mr. Muskie, the Democrat, for Governor. The Republican House member from that district also lost votes compared with 1952.

The party machine was not working as it should, partly because Maine was considered a "rock-ribbed Republican" State, and partly because of the Governor's troubles. He fell out with Senator Frederick G. Payne. He alienated Portland businessmen. He was unpopular with farm groups.

Such factional fights are not unique. Republicans are in similar trouble elsewhere. A dissident group is working against the party's candidate for U. S. Senator in New Jersey. There are feuds in Indiana and Ohio.

Democrats, on the other hand, are working hard to mend fences, to repair party machines that broke down in 1952. In Maine, at least, they have succeeded.

They are united for the first time in years. They have a new State chairman who has been able to smooth differences and win favorable attention for the party. Even Republicans say the Democratic candidates were the best they had encountered in a long, long time.

The result, in Maine and probably elsewhere, is that more Democrats are going to the polls. Democratic leaders say they are sure they won most of the first-time voters and also got more Democrats than usual to vote.

Republicans, on the other hand, failed to get a good many people who turned out to vote for Mr. Eisenhower in 1952 and who were, at least potentially, Republican voters.

The combined vote was large, for a general election, but it was Democratic votes that kept it big.

National issues are not swaying voters much, in spite of the way leaders of both parties are harping on them.

VOTES FOR HOUSE SEATS IN MAINE'S 3 DISTRICTS

	First district—most of Maine's industry, State's biggest city and seaport		Second district—State capital, some industry, farming, lumbering		Third district—potatoes, fruit, quarrying, fishing	
	Republican	Democrat	Republican	Democrat	Republican	Democrat
1948	63%	37%	67%	33%	71%	29%
1950	54%	46%	58%	42%	63%	37%
1952	62%	38%	67%	33%	76%	24%
1954	52%	48%	54%	46%	60%	40%

A DEMOCRATIC SENATE?

In Maine's most recent mid-term elections for the U. S. Senate, vote of major parties went this way:

	1946	1952	1954
Democrats	**36.5%**	**37.3%**	**41.5%**
Republicans	**63.5%**	**62.7%**	**58.5%**

Democratic gain in 1954: 4 percentage points over 1952, 5 points over 1946.*

If Democrats gain 4 or 5 points in all States—

- **Republicans will lose 4 Senate seats.**
- **Control of Senate will shift to Democrats.**
- **Division of Senate in 1955 will be: 51 Democrats, 44 Republicans, 1 Independent.**

*Compared with the last time Senator Margaret Chase Smith ran, the presidential year 1948, the Democratic gain in 1954 was 12 percentage points. If that gain were projected nationwide this year, Democrats would pick up 9 more Senate seats, making the Senate division: 56 Democrats, 39 Republicans, 1 Independent.

A DEMOCRATIC HOUSE?

In Maine's last two mid-term elections for House seats, the results were these:

	1950	1954
Democrats	**42.4%**	**44.5%**
Republicans	**57.6%**	**55.5%**

Democratic gain in 1954: 2.1 percentage points.*

If Democrats gain 2.1 points in all States—

- **Republicans will lose, Democrats gain, 13 House seats.**
- **Control of the House will shift to Democrats.**
- **Division of the House then will be: 228 Democrats, 206 Republicans, 1 Independent.**

*Compared with the presidential year 1952, Democrats gained 11.7 percentage points in 1954. If that gain were projected nation-wide, the result would be a Democratic sweep in 1954. Democrats would pick up 110 more House seats, making the House division: 325 Democrats, 109 Republicans, 1 Independent.

Farmers in Maine are grumbling about roads, local appointments, and plans, now abandoned, to consolidate State sanitariums. Price supports do not seem to have been a factor, farm leaders insist.

Governor Cross did speak out against supports for potatoes when prices were low. But today prices are up, and many growers, in spite of damage from bad weather, hope to do better than they did last year.

Price supports will have more effect on farmers in some other sections. Maine merely shows the issue does not have universal appeal, that lowering of supports is not taken by all farmers as a sign that Republicans are to be feared.

The "national recession" is also being stressed by the Democrats, but, again, voters seem more concerned with local problems.

In Maine, the Democrats found this one: Figures show that industry and job opportunities in the State have not been growing, over the years, as fast as in some other places. This argument was repeated over radio and television, and one party chief says he feels it was the most effective economic weapon. It was used to make voters think the Republican State regime was holding them down and that they'd better change.

This was more important, the Democratic leader says, than unemployment. The votes in depressed areas were considered a small factor, but towns where the mills are humming briskly gave the Democrats a whopping victory.

Unemployment is likely to cause the Republicans more trouble in other States, such as Massachusetts, Michigan and West Virginia.

Foreign policy is another subject that isn't moving the voters very much, to judge by Maine. The two candidates for U. S. Senator argued about it, but the vote showed no strong feelings.

Republican Margaret Chase Smith won by a large margin, but not so big as she got in 1948 when first elected.

Voting for Governor: The Turnout in Maine

Year	Total Vote	Per Cent of Adult Population That Voted	Winner Was a
1940	255,000	48	Republican
1946	180,000	32	Republican
1948	223,000	39	Republican
1950	240,000	42	Republican
1952	248,000	45	Republican
1954	248,000	44	Democrat

The "normal" trend is what shows up in the Maine vote.

As a rule, the party in power loses strength in the mid-term election, when attention centers mainly on the local issues. An exception was 1934, first contest the Democrats faced after they had come to power. Then, the depression was still an emotional factor, and it helped win them more seats in Congress.

This time, if Maine voters are typical, there is no strong emotional issue on a national scale, to keep the pro-Eisenhower voters stirred up.

Local matters, things that seem small to the outsider, are proving more important politically than the "cold war" or taxes or broad economic policy.

What Republicans now fear is that these local problems, which are changing votes, will work against them, more than against the Democrats, in places where Republicans won only a slim majority in 1952 and where they don't have the big margin they had in Maine. They have been counting on the Eisenhower appeal to overcome their problem, but Maine indicates that it hasn't.

More importance is now being given to the factional fights within the Republican Party. Maine suggests that Republicans are not likely to roll up big victory votes without the kind of eager, united organizations they had in 1952.

WHEN NEGROES GO TO SCHOOL WITH WHITES—

Can Southern cities make the switch from segregated to mixed schools without running into trouble?

In Washington, D. C., scene of the first big test, all went calmly—at the start. Some parents grumbled, a few moved. But children made little fuss, even when some found themselves the only white pupils among hundreds of Negroes, or all-white classes drew Negro teachers.

Trouble is still possible. Danger, officials say, is in school dances, dating or rivalries of teen-age gangs.

There wasn't even a fist fight between youngsters. That's how quietly a historic change came as the nation's capital ended segregation in its public schools last week.

Washington is the first big city affected by the Supreme Court's recent ruling to abandon segregation. So this was the first big test.

The capital, by tradition, is a Southern city. Its schools have always been segregated. Fifty-nine per cent of all Washington pupils are Negroes.

Yet, when 100,000 Washington children entered mixed schools for the first time on September 13, there was no rioting, no violence, no picketing, not even a protest meeting. Parents, although reluctantly on the part of some, accepted the change.

Children outdid their parents in going along with the new order. White and Negro youngsters alike greeted newcomers of the opposite race with politeness everywhere, with downright friendliness in many cases.

Some white children found themselves alone in schools where all other pupils were Negroes. Three Negro teachers had all-white classes. No trouble developed.

Trouble yet may come. School officials realize this.

The social problems that mixed schools may create still lie ahead. Principals are wondering: What about high-school dances? Adolescent romances? What will happen when Negro Johnny asks white Mary for a dance or a date?

Passive resistance has developed. Some white parents in Washington are trying to keep their children from mixed schools by transferring them to private schools, by moving to all-white areas or by appeals for special permission to switch to schools where Negroes have not yet entered.

So far, however, it is generally agreed that the mixing of races in Washington schools is working out far better than most people expected.

Opening day of Washington schools was regarded as a stern test. Trouble was feared. There had been mutterings of protest when school officials announced their plan to proceed immediately with desegregation, without waiting for the Supreme Court to set a deadline for action. One group of parents went into court in a vain effort to delay it.

Police stood by at all schools on opening day. Mothers waited nervously outside. Although teachers tried to be gay and reassuring, everybody was on edge.

Nothing happened. The youngsters took it all in stride.

McKinley Technical High School was a typical example. McKinley used to be an all-white school. But this year there were 346 Negroes and 588 whites.

No mention of Negroes was made by the principal, Charles E. Bish, in his opening talk. He merely said: "We owe it to Tech to keep its traditions as fine as they have always been. We are going to act like Tech students. Good behavior here is everybody's business."

(Continued on page 26)

"I PLEDGE ALLEGIANCE . . . " Mixed classes begin for 100,000 school children in Washington, D. C.

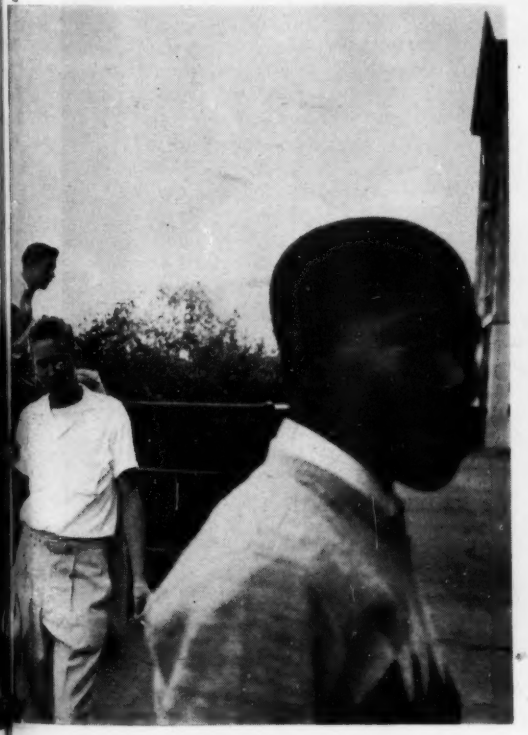
SOME WERE A "LITTLE LEERY" of each other on opening day, especially in the Capital's high schools

AFTER-SCHOOL SCENE ON "INTEGRATION DAY"

CALL ON ME!

YOUNGSTER RECITES

The smaller children mingled easily



Photos: Phillips from Black Star

NEGRO TEACHER TAKES OVER BIRACIAL CLASS

So You Want to Speculate...

Good.

It's that spirit, that willingness to take a risk, that helped build America. It was true of the early explorers and fur traders, of the Henry Fords and the John D. Rockefellers. And it's true of thousands of today's business men. Yes, and millions of farmers, for every man who ever put a seed in the ground remains inevitably a speculator.

But *should* you speculate? Specifically, should you speculate in commodities and thus elect to share with the farmer the natural hazards of bringing a crop to market?

The answer depends on you—on your temperament, on your financial ability to carry the risks involved, and above all things, on your knowledge of exactly what you're doing. For the man who buys or sells futures contracts without the most complete and reliable information he can lay his hands on—information about crops, markets, and prices—isn't a speculator. He's just a fool.

So if you want to speculate, we'll be glad to consult with you about the outlook for any commodity market and about the extent to which your own situation will prudently permit you to speculate.

As a starter, you might like to study our little pamphlet *"Speculation as a Fine Art."* You'll find it a challenging review of the certain risks and the uncertain rewards of speculation. We'll send you a copy without charge or obligation, of course. Just write—

WALTER A. SCHOLL
Department SA-52

MERRILL LYNCH, PIERCE, FENNER & BEANE
70 Pine Street, New York 5, N. Y.
Offices in 106 Cities

"Invest – for the better things in life"

When students were divided into "home sections," Negroes were mixed into each group in the same proportion as in the entire student body. Four Negro and 47 white teachers were assigned mixed classes indiscriminately.

Both teachers and students acted, in those first few critical hours, as though they had been accustomed to racial mixing all their lives, although few had ever gone to school with the other race before.

In an elementary school, Petworth, where two classes were necessary in some grades, the 123 white and 370 Negro children were divided into separate rooms by date of birth—not by color.

No color lines were drawn in seating arrangements. Most pupils chose their own desks and, in general, they did not go out of their way to avoid the other race. In one elementary school, a teacher found that Negro boys had grouped together in two rows on one side. To separate them without drawing attention to the race angle, she said: "Now, there are too many boys on this side of the room. Some of you come over here and sit near the girls."

In children's first contacts, there was some hesitation. Negro and white youngsters, especially in high school, were a bit shy—a "little leery" of each other, as one observer commented. There was a tendency to bunch up in racially separate small groups. But in classes, they mingled freely.

A few pupils, finding themselves a racial minority, hung back and looked lonesome. The smaller Negro children, looking at the strange white faces around them, watched for a smile. When they got a smile, they responded quickly.

No antagonism was visible among the children. If any felt it, they were careful not to show it.

At recess time, in elementary schools, race mixing got another test. It passed there, too. Negro and white children generally played together, not separately.

"I don't believe children this age know there is such a thing as race differences," one teacher in the lower grades remarked.

There were some Negro groups that clung together, and some white ones. But when you talked to them, you learned that they were neighbors and long-time playmates. The cliques were natural, not racial.

Sometimes old friendships had the effect of mixing, rather than separating, the races. In Washington, Negroes for years have been spreading out into many residential areas. Children of different races who had lived as neighbors and played together at home mixed naturally together in school.

A few white youngsters manifestly enjoyed the novelty of Negro companions. One little girl of 7 scampered across the school yard at Raymond Elementary School with her arms about two

—Phillips from Black Star

MOTHER BRINGS SON TO CLASS
. . . most parents accepted the mixing calmly

little Negro girls. All were smiling happily. Another little white girl grasped the hand of her Negro teacher, led her up to friends and proudly introduced her with: "This is my teacher."

Children's comments, although seldom outright protest, showed that some doubts lingered behind their deliberately casual manner.

One white high-school lad remarked: "It's not as bad as I thought it would be. We've only got one colored boy in our room."

A Negro girl at Kimball Elementary School, left standing alone at recess, said, "I don't like it here." She would rather be back at the Negro school with her old friends.

Most unhappy were those who found themselves the only ones of their race in a school, or with only a few companions of the same color. This happened often at the outset, due to the system adopted by Washington of spreading the desegregation program out over an entire year.

At the start of the autumn term, students were generally left in their old schools. But all students entering the Washington system for the first time were sent to the nearest schools, regardless of color. Thousands of students in overcrowded Negro schools also were shifted to near-by unfilled white schools.

Widespread mixing was the over-all result. About 30,000 out of the 100,000 pupils were thoroughly intermixed, racially. Nearly all schools had at least a sprinkling of racial mixture. Few schools remained all white or all black. By next year, the mixing will be complete.

In the meantime, however, some unusual conditions have been created that it will take time to correct.

At Cardozo High School, for instance, only 2 white students turned up among 1,861 Negroes. At Dunbar High there were 3 whites and 1,152 Negroes, and at Western High only 2 Negroes among 519 whites.

Seven grade schools had only one white student each among hundreds of Negroes, and five had only one Negro each, with the rest of the pupils white.

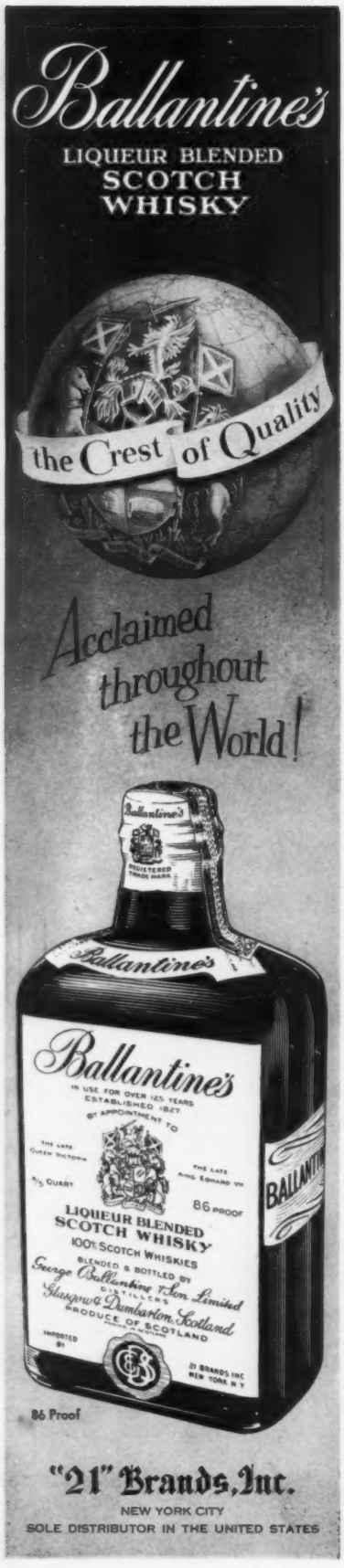
Mixing teachers of both races also has produced some temporary disproportions. There are 1,667 white and 1,943 Negro teachers in the city school system. But several schools with a majority of Negro students drew a majority of white teachers in the reshuffle, while three Negro teachers turned up in all-white schools.

Teachers are confident about the success of mixed schools in Washington.

Hobart M. Corning, superintendent of all Washington schools and the man who

(Continued on page 28)

...in sum and substance
THERE IS NO BETTER ADDING MACHINE
THAN THE REMINGTON RAND ALL-ELECTRIC
To SUM, or list, its 10-key keyboard makes possible fast, accurate touch-method operation. In SUBSTANCE, its clear, easy-to-read 2-color tape provides the perfect means of checking for accuracy, and a permanent record of figurework accomplished.
For complete information, write for booklet No. AD567.
Remington Rand
Room 1919, 315 Fourth Avenue, New York 10, New York



drew up the integration plans, said the change brought "no more than the usual difficulty and confusion" on opening day.

"This is going to surprise a lot of people who thought it couldn't be done," said John Paul Collins, a school principal. Principal Bish of McKinley High reported "not one single problem."

The big problems, all teachers agree, are going to be social. Will there be trouble if Negroes date white girls or dance with them at school parties?

A white high-school teacher, Miss Eleanor McAuliffe, expressed concern about school dances. "We have about six every year," she said. "I don't know what we will do this year. Some of the girls already are asking me about it. I think the parents, the teachers and the students will just have to work it out together. Of course, we cannot have segregated dances."

Close friendships are expected to develop between many white and Negro students—and few rule out the possibility that some of these friendships might grow into romances. Several parents of girl students admitted that they foresee a likelihood of Negro escorts for their daughters at school parties.

Many are reserving judgment on mixed schools until it can be seen how these social problems work out.

Violence, also, still remains a possibility. The biggest danger is in high schools that have been troubled in the past by teen-age gangs. Some white students have been heard to threaten beatings for Negroes, and, in one school, authorities have been alerted against prowling groups of Negro "beboppers."

Police and school officials are prepared to deal firmly with any outbreaks. Said one principal: "I expect a few rows. But I'll take the boys in hand and tell them they are not making the laws."

Objections by parents have developed against desegregation, especially in cases where their white children are badly outnumbered by Negro schoolmates.

One father snatched his 11-year-old daughter out of school after learning that the girl's teacher and two thirds of her fellow students were Negroes. He arranged her transfer to another school, predominantly white, on his certification that she would live with an aunt in a different part of the city.

The mother of a girl in third grade protested when she found her child was one of only 10 whites among 1,000 Negroes. But the girl seemed happy, and school authorities counseled patience until the school population becomes better balanced in a matter of months. The mother finally agreed.

Another mother, taken aback when she took her child to school and saw no other

–Phillips from Black Star

HIGH-SCHOOL CLASSROOM

Teachers are confident about the success of mixed schools

whites, took the child home and transferred her to a parochial school.

Most parents accepted the mixing calmly, however. Many expressed the attitude that "since the Supreme Court says it has to be this way, we'll just have to take it, and we might as well be good-natured about it."

One white mother entered her son in a kindergarten having only three whites among 73 children. She was not concerned. She said Negroes live all around her, and the children get along well.

A white grandmother, outside the same school, said: "I don't like this at all. But I'll have to send my grandson here. I can't afford a private school. He likes it all right. I suppose it will work out all right."

Two Negro mothers at this school were very happy about the development. Said one: "My husband is in the Army. Now he feels he's got something to really fight for."

Resistance to mixed schools is being attempted by some parents. But it is proving difficult—and expensive.

The most common method of resistance is to move out of a neighborhood where there are Negroes into areas that are all or nearly all white, or outside Washington to Maryland and Virginia suburbs, where schools are still segregated. From one area where Negroes have been increasing in number, there was a mass exodus of white residents after desegregation was announced.

It is hard, however, to find any school district of Washington where there are no Negroes. Only 15 out of 166 schools in the city had no Negro pupils on opening day, and most of these will acquire some Negroes soon.

Scores of parents have appealed for transfers of their children—and some of the grounds stated are considered subterfuges. Where the cause is clearly racial, transfers are generally denied.

Those private schools that are still segregated have profited by the mixing of public schools. All are crowded. But the cost of private schools limits the number who can use this escape. Hundreds of parents who talked of sending their children to private schools dropped the idea upon learning the cost.

On the whole, Washington people seem to have either welcomed the end of segregation or resigned themselves to it.

While most Southern cities are holding back, waiting for the Supreme Court's final word on how soon they must integrate their schools, Washington has gone ahead and done it.

President Eisenhower encouraged this early start, with the idea that Washington should set an example for the nation. How this first test works out may influence other cities.

CONTINENTAL RED SEAL®

means more and better power

JAEGER MODEL 4½HM-D Mixer. Capacity 4½ cu. yd. Powered by Continental Red Seal F-6226 engine.

NO OTHER ENGINE GIVES YOU ALL THESE ADVANCED ENGINEERING FEATURES

PATENTED INDIVIDUAL PORTING
•
FULL-LENGTH WATER JACKETS
•
TOCCO-HARDENED COUNTER-BALANCED CRANKSHAFT
•
LEAKPROOF WATER PUMP
•
ALLOY STEEL VALVE SEAT INSERTS
•
PATENTED OIL AND DUST SEALS
•
POSITIVE ROTATION EXHAUST VALVES
•

Continental Red Seal power for specialized applications is now available at levels ranging from 2 h.p. up to more than 1,000, in liquid-cooled and air-cooled models, for use on all standard fuels. And, strictly on the score of PERFORMANCE—economy, dependability and low maintenance cost—it is finding its way into more and more leading makes of specialized machines. The equipment builder's good name, and the end-user's satisfaction, are double-clinched by this fact: EVERY CONTINENTAL RED SEAL IS NOT ONLY BUILT FOR ITS JOB, BUT BACKED BY PARTS AND SERVICE FACILITIES COAST TO COAST.

•

A COMPLETE LINE OF 4-CYCLE AIR-COOLED ENGINES

Continental also builds air-cooled models, from 2 to 3 h.p., for heavy-duty applications in industry and on the farm. They embody the exclusive Contex® external ignition system, greatest air-cooled engine advance in recent years. For information, address Air-Cooled Industrial Engine Division, 12800 Kercheval Ave., Detroit 15.

6 EAST 45TH ST., NEW YORK 17, N. Y. • 6218 CEDAR SPRINGS ROAD, DALLAS 9, TEXAS • 3817 S. SANTA FE AVE., LOS ANGELES 58, CALIF. • 910 S. BOSTON ST., ROOM 1008, TULSA, OKLA. • 1252 OAKLEIGH DRIVE, EAST POINT (ATLANTA) GA.

Continental Motors Corporation
MUSKEGON, MICHIGAN

WHERE U.S. MAY FIGHT NEXT

A Firsthand Report on Quemoy, "Golden Gate" to China

The next war for the United States may be the war now opening in Formosa Strait.

Red China is out to take four tiny islands within sight and sound of the Communist mainland. Chiang Kai-shek's Nationalists hold these islands and intend to keep them.

The U. S. is involved in this latest shooting war through the U. S. decision to keep the Communists out of Formosa, through a U. S. program to arm and support Chiang's troops.

Quemoy, right now, is out of bounds to U. S. fighting men. But a *U. S. News & World Report* editor has visited Quemoy. This article is his report on what is at stake there.

QUEMOY ISLAND, China

The best way for an American to get to this island is to fly across the Strait from Formosa. Once on Quemoy you no longer can see the big island which is Chiang Kai-shek's headquarters. What you do see clearly across the waters of the Bay is Communist China.

Here on Quemoy you are in the midst of a showdown of major importance to the Far East and to the United States. At stake are islands which are considered the strategic keys to Formosa itself.

Communist China, clearly, is out to take the Quemoy islands.

Communist artillery is pounding at Chinese Nationalist positions on Quemoy and its three smaller island dependencies. There is military activity all along the Communist shore. One Communist island is little more than a mile from a Quemoy beach. With a war on, that is close.

Nationalist China, equally clearly, is out to hold these islands.

Chiang's Nationalists on Formosa have sent more than 50,000 U. S.-trained and U. S.-armed troops here. Overhead, U. S.-built Nationalist bombers fly from Formosa to hit targets on the Communist mainland. Offshore, destroyers with names like *Hanyang* and *Loyang*—once the U. S. Navy's *Hilary P. Jones* or *Benson*—are watching for Communist shipping.

In all of this the U. S. has a big stake. Many American strategists consider Formosa vital to U. S. defense in the Pacific. And the U. S. is publicly committed to deny Formosa itself to the Communists. So it is to the U. S. interest to keep the Communists from crossing the 6-mile stretch of water that lies between these beaches on Big Quemoy and the docks of the city of Amoy.

The prize in all the shooting going on here is a group of four little islands barely big enough to make a tiny dot on the map of the China coast in your atlas.

Looking around at these islands, you find they are not much bigger, in total area, than Staten Island in New York Harbor. The total population, not counting troops, is about 40,000.

Big Quemoy island is the largest of the group. It is a fertile strip of land about 13 miles long from tip to tip, a total area of about 57 square miles. Its name, in the Fukien dialect which all Chinese in this region speak, is Kin-men —"Golden Gate."

From the door of a command post on Quemoy you can look out on a breath-taking view of the Communist mainland. Six miles across the Bay is Amoy, a city of a million people. It lies at the base of a coastal range of mountains, at the center of a network of South China roads. It is by long odds the best base for any Communist effort to take Formosa, which lies just 130 miles away across the Formosa Strait. But Amoy harbor is bottled up because the Chinese Nationalists are in possession of Quemoy.

This gateway to the mainland has been the scene of a fantastic amount of work in recent years. You can see on every hand the evidence of troops kept busy on scores of projects when arms

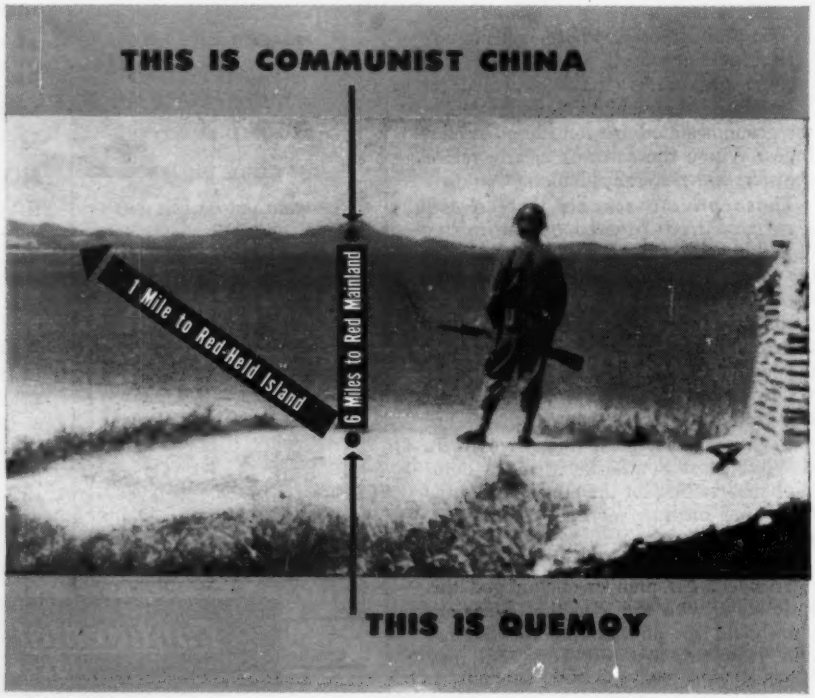


Photo: United Press

© 1954, By U. S. News Pub. Corp.

and ammunition were short, when Chinese Communists were kept too busy in the Korean war to challenge the Nationalists on their islands.

The brown soil of Quemoy is riddled and burrowed with elaborate defense works, mostly made by the hands of about 50,000 troops who have guarded this island for six years. Firing platforms and gun turrets were built long before the Chinese Nationalists got the guns they needed from the U. S. Now, however, thanks to U. S. military aid, the guns are there, ready to meet a Communist assault.

A five-lane highway of earth on a deep base of crushed rock runs from one end of Big Quemoy island to the other. In most places the road is as smooth as a billiard table, swept daily. Even the drainage ditches on both sides of it are kept neat and clean. Quemoy's officers tell you proudly that there is not a road to match this one in all of mainland China.

Roads and footpaths all over Quemoy are lined with little trees planted no more than 7 feet apart. Around each and every tree, planted in an elaborate "reforestation program" a year ago, there is a neat, circled earth dam. During dry spells on Quemoy the troops watered these trees.

Camps and training grounds for the Nationalist troops are as clean and as elaborate as hand labor can make them. Neat fields producing all sorts of foodstuffs are near each camp—Que-

(Continued on page 32)

—Wide World

ONE OF 50,000 GUARDING QUEMOY
A Nationalist fires on the enemy

"We looked at the Middle South

for General Motors—and found a basic raw material ready-cooked and piping hot"

HARLOW CURTICE
President, General Motors Corporation

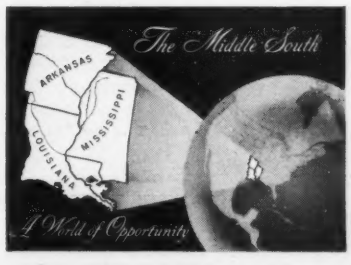
"In making aluminum castings at our new Fabricast plant at Jones Mill we get the aluminum in a molten state right from local suppliers who get *their* raw material from the good Arkansas earth. That's real teamwork of a kind that saves money.

"There were other good reasons why GM picked the Middle South for this important investment: the cordial co-operation of state and local governments, competent labor in plentiful supply, low-cost power and natural gas.

"The mild all-year climate is a big help, too—not only in our plant operations, but in the healthful recreational opportunities it offers our employees."

For a closer look at the Middle South, write or visit the **Middle South Area Office,** 211 International Trade Mart, New Orleans —or any of these business-managed, tax-paying electric and gas service companies.

ARKANSAS POWER & LIGHT COMPANY
Little Rock, Ark.
LOUISIANA POWER & LIGHT COMPANY
New Orleans, La.
MISSISSIPPI POWER & LIGHT COMPANY
Jackson, Miss.
NEW ORLEANS PUBLIC SERVICE INC.
New Orleans, La.



It pays to look at the Middle South

Save money

in your duplicating department

FREE BOOKLET

TELLS YOU HOW!

NEW, revised edition of the famous 3M "Executive's Manual"! A fact-packed handbook that explains in non-technical language how to get the most return from the valuable floor space allotted your printing department. Suggests new methods to improve printing quality and make better use of existing equipment. Shows how "3M" Pre-sensitized All-aluminum Photo-Offset Plates can save time and money for you. Thousands of executives have profited from reading earlier editions of this helpful handbook. Send for your copy today — no cost or obligation, of course!

---CLIP and MAIL!---

MINNESOTA MINING & MFG. CO.
St. Paul 6, Minnesota US-94A

Please send me a free copy of the new edition "Executive's Manual." I understand there is no cost or obligation.

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

_____

moy's troops grow most of the food they consume, importing little more than rice from the mainland. Fat geese and ducks waddle about the training fields. "Military property," your guide says proudly.

Little Quemoy island lies about 2 miles closer to the Communist city of Amoy, in a position to protect Big Quemoy from any attacking force from the mainland. It rises out of the harbor like a miniature Gibraltar. It's considerably smaller than Big Quemoy, with an area of about 10 square miles of rock.

Even in peacetime, Little Quemoy supported only a few hundred farmers. Today the island is swarming with Nationalist troops, most of them still working on the elaborate system of tunnels, storerooms, living quarters and artillery emplacements cut out of the rock.

Two little islets called Tatan and Erhtan also are held by the Nationalists. Tatan is about 3½ miles long, but it is little more than a reef, only 1,000 feet across at the widest point. Erhtan is about one-half mile long and not as wide. The two islets together have a garrison of only about 300 men, but they provide cross fire to protect both Big and Little Quemoy.

Strategically, these four islands block the entrance to the harbor of Amoy, the Communist-held city directly opposite Formosa. Neither Foochow to the north nor Swatow to the south has the harbor and port facilities to handle a Communist attempt to take Formosa. The route from the mainland to Formosa is from Amoy—and that route is closed as long as Chiang's Nationalists hold these little islands.

There is a precedent for Chiang's strategy on Quemoy. The last Emperor of the Ming dynasty to rule on China's mainland finally fled to Formosa, but lost it when he lost Quemoy.

Question of "face"—always important in the Orient—is an item of major importance for both Communists and Nationalists in the battle for Quemoy.

Communists insist that Formosa belongs to them because they have conquered the rest of China. Chiang's Nationalists, in Communist propaganda, are billed as defeated leaders without followers or influence. As long as millions of people in South China know that the Nationalists have bottled up the port of Amoy, as long as the Nationalists hold the "Golden Gate" of Quemoy island, the Communists will "lose face."

Chiang's Nationalists, when they fled from the mainland in 1949, turned and fought on the island of Quemoy. As Nationalist officers tell it now, a force of 20,000 Communists was driven into the sea when the Reds tried to storm Quemoy island in October, 1949. Now, as the new battle for Quemoy takes shape, the Chinese Nationalists are getting their first chance since 1949 to show that they can stand, fight and hold a position against Chinese Communists.

End of the battle for these little islands will not mean an end to Chinese civil war, whether Quemoy is held or lost. But the outcome will certainly influence the strategy of the U. S. in the Pacific and the Far East.

—Faucett in the Providence (R.I.) Journal

"PLAYING WITH MATCHES"

The kickback could be bigger than the Communists bargain for

Gowns by Philip Hulitar—Jewelry by Cartier

THE ONE CAR THAT BEFITS THE OCCASION!

There are nineteen different makes of motor cars manufactured in the land today. And yet, the overwhelming majority of motorists would agree that only one is perfectly appropriate for the distinguished occasion pictured above.

That car—of course—is Cadillac!

And you could safely predict that at any splendid occasion such as you see here . . . or at any of the season's proudest social events . . . or at any of the year's most significant affairs of state . . . the Cadillacs would be in dominant attendance!

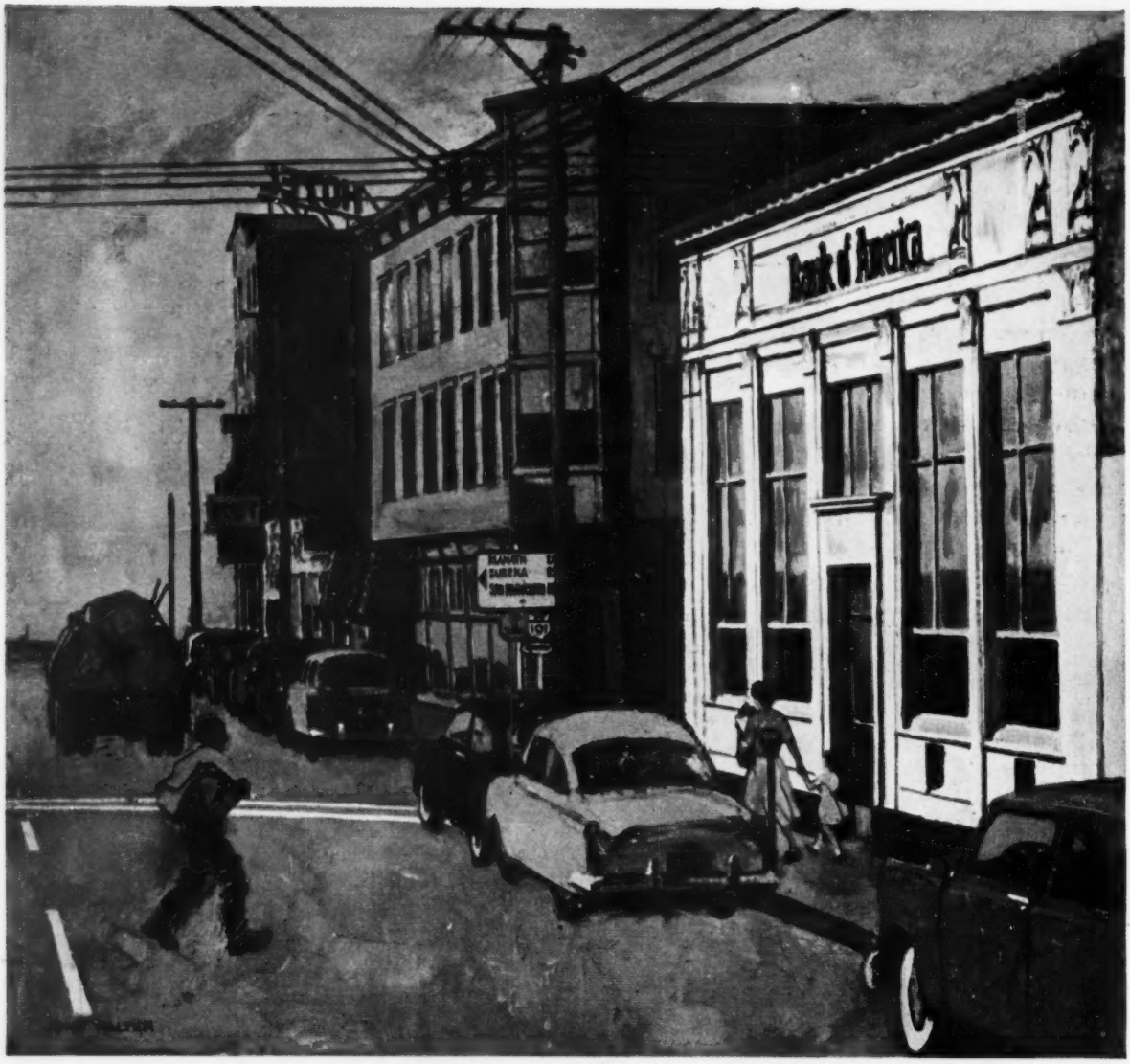
But it is important to remember that a Cadillac also belongs in far less pretentious surroundings. For with its great beauty, its fine performance and its magnificent luxury—Cadillac also offers unusual dependability, remarkable operating economy and extraordinary value.

That, we think you will agree, is a combination worth your personal consideration. Won't you let your dealer give you the full, wonderful Cadillac story?

It is entirely possible that a Cadillac belongs in *your* driveway!

CADILLAC MOTOR CAR DIVISION ★ GENERAL MOTORS CORPORATION

Cadillac



Crescent City – a northern California lumber and fishing center – Centennial Year. . . 1854 - 1954

Border to border... the bank that knows California

With resources of over $8 billion, Bank of America is the world's largest bank. Its shares are held by more than 200,000 stockholders.

★

Bank of America has main offices in the two Reserve cities of California, San Francisco and Los Angeles. Overseas branches: London, Manila, Tokyo, Yokohama, Kobe, Osaka, Bangkok, Guam. Representatives: New York, Mexico City, Milan, New Delhi, Paris and Zurich. Correspondents throughout the world. Bank of America (International), New York, a wholly owned subsidiary; overseas branch, Duesseldorf.

From Crescent City near the Oregon line to Calexico, 900 miles south on the Mexican border, Bank of America's 546 branches cover the length and breadth of California. In lumber communities, remote mining districts, cattle towns – in the rich farming valleys and great commercial centers – this bank brings its own, unique type of neighborhood banking service to Californians everywhere.

Through this statewide system, Bank of America maintains an efficient collection service... supplies local credit information and performs an overall banking function that is exclusive with the *one* bank that serves *all* of California. For information write Bank of America, 300 Montgomery St., San Francisco, or 650 South Spring St., Los Angeles. Attention: Corporation and Bank Relations Dept.

...Get to know the bank that knows California

Bank of America
NATIONAL TRUST AND SAVINGS ASSOCIATION

COPYRIGHT 1954, BANK OF AMERICA · · ·

Mr. Dulles Keeps on the Go

Travel Record: 152,128 Miles in 20 Months

Selling and servicing U. S. foreign policy keeps Secretary Dulles moving fast and far. His record to date: 152,128 miles.

Crises in Asia and Europe require speedy trouble shooting. Repairs on the spot, sometimes new plans, are required when old plans go wrong. It is personal diplomacy in an air age.

The conduct of U. S. foreign policy, for Secretary of State John Foster Dulles, is a fast-moving business. Crises in current policies and a search for new approaches keep Mr. Dulles on the run.

The travels of Mr. Dulles are shown on the accompanying chart. In 20 months his air mileage, added up, is 152,128—the equivalent of six trips around the world.

Personal diplomacy, as practiced by the Secretary, involves travel on short notice for face-to-face talks with the world's leading statesmen. A quick decision last July, for example, got Mr. Dulles, his top aides and their papers aboard a plane for Paris within four hours.

Major problems now keeping the Secretary busy all affect his schedule. In the last month, for example, these issues lay behind the Dulles trips:

- To fill the defense gap left by the deal dividing Indo-China with the Communists, Mr. Dulles flew to Manila and worked out a Southeast Asia Treaty Organization with seven other nations.
- To put Communist China on notice that a move against Formosa and its island defenses might bring war with the U. S., Mr. Dulles flew from Manila to Taipei, Formosa's capital.
- To counteract Russia's effort to woo Japan away from the U. S., Mr. Dulles took another side trip to Tokyo.
- To fill the vacuum left by the collapse of the European Army plan, the Secretary took off for Bonn, Germany, for a talk with Chancellor Konrad Adenauer—three days after his return to Washington from Manila.
- To strengthen American strategy for keeping Communist China out of the United Nations, the Secretary scheduled a quick return from Europe in order to be present at the opening session of the U. N. Assembly in New York.

Priorities present a real problem for Mr. Dulles. Question of where he is needed most arises constantly. Sometimes a flight to Europe or to Asia is postponed because the President wants him to brief congressional leaders. Sometimes overseas crises get precedence.

On the move, Mr. Dulles puts in a full working day. He travels in a "special-mission aircraft" provided by the Military Air Transport Service. On these planes the Secretary has a compartment at the rear which contains sleeping space and office space.

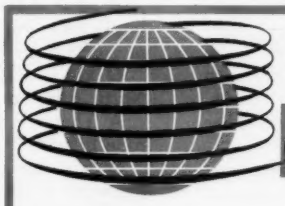
Outward bound from Washington, Mr. Dulles works out his approach to the foreign statesmen he plans to meet abroad. In many cases they are on hand to greet him when he steps off the plane, so he has little or no time for work with his own staff upon arrival.

Homeward bound, Mr. Dulles writes out his report to the President, usually sent to the White House or presented in person immediately on his arrival in Washington. In addition, the Secretary may have to work on a report to congressional leaders, perhaps on a report to the American public in the form of a speech.

Those aboard the Secretary's plane on his overseas flights always include his special assistant, Roderic L. O'Connor, his personal secretary and a security officer. Mrs. Dulles accompanies him on many trips. So does his Assistant Secretary of State for Public Affairs, Carl W. McCardle.

For relaxation, Mr. Dulles goes swimming whenever his work permits. In the past 20 months he has been swimming at the mouth of the Black Sea, in the Pacific, the Atlantic and the Mediterranean.

His favorite landing strip in his world traveling is the one at Syracuse, N. Y. When Mr. Dulles's plane lands there, it means he is on the way to his camp on Duck Island in the St. Lawrence River, where there are no telephones, no teletypewriters and no foreign diplomats.



DULLES'S TRAVELS—

6 Times Around the Globe

Jan. 30-Feb. 9, 1953—Good-will tour through Europe	10,500 miles
April 21-27, 1953—NATO meeting, Paris	7,830 miles
May 9-29, 1953—Good-will tour, Middle East	12,308 miles
Aug. 2-10, 1953—Korean Treaty, Japan and South Korea	19,350 miles
Sept. 14-19, 1953—Foreign ministers' meeting, London	7,845 miles
Dec. 4-8, 1953—Big Three meeting, Bermuda	2,000 miles
Dec. 11-15, 1953—NATO meeting, Paris	8,000 miles
Jan. 21-Feb. 19, 1954—Big Four meeting, Berlin	8,334 miles
Feb. 28-March 13, 1954—Inter-American Conference, Caracas	4,440 miles
April 10-15, 1954—Indo-China talks, London and Paris	8,000 miles
April 20-May 4, 1954—Indo-China talks, Paris and Geneva	8,255 miles
July 12-15, 1954—Indo-China talks, Paris	7,830 miles
Aug. 31-Sept. 13, 1954—SEATO meeting, Manila	21,580 miles
Sept. 15-19, 1954—European defense, Bonn and London	8,700 miles
In addition: 14 round trips between Washington and other U.S. cities	17,156 miles

Total Travel, 20 months . . . 152,128 miles

Source: State Department

© 1954, By U. S. News Pub. Corp.

Interview with SENATOR ALEXANDER WILEY

Chairman, Senate Foreign Relations Committee

WHAT EUROPE'S LEADERS TOLD SENATOR WILEY

EDITOR'S NOTE: *Will the U. S. have to pull its troops out of Western Europe?*

What happens next on German rearmament? Are the French heading for a deal with Russia?

Can the West's alliance be saved? How are statesmen really sizing up prospects now?

Answers to these and other questions are given here by Alexander Wiley, chairman of the Senate Foreign Relations Committee, after talks with Europe's leaders. He was interviewed by Robert Kleiman, Regional Editor for "U. S. News & World Report."

ALEXANDER WILEY, *Wisconsin's senior Senator, is a top Republican figure in foreign affairs.*

Since entering the Senate in 1939, he has attended many international conferences. He has held his present chairmanship since 1953.

This interview took place in Paris as Senator Wiley ended a month-long visit to Western European countries.

On that trip, he talked with the prime ministers of Britain, France and Western Germany to get their views on problems now confronting the U. S. among its Western European allies.

At PARIS

Q Where have you been, Senator Wiley, and which leaders have you seen on this trip?

A I spent two and a half hours with [Prime Minister] Churchill at Chartwell [England] and with [Foreign Secretary] Eden, more than three hours with [Chancellor] Adenauer in Germany and have had a long talk and dinner with [France's Premier] Mendès-France. I have also been to Belgium to see [Foreign Minister] Spaak and to Vienna, Helsinki and Oslo where I saw the foreign ministers and other leaders of those countries.

Q After your extensive trip around Europe are you now optimistic or pessimistic about the future of Western defense?

A By nature, I am an optimist. Although the European Defense Community treaty was laid aside by the French Assembly, I believe that the basic idea of EDC still lives.

Q Do you think EDC can be revived?

A Not as EDC. But the idea or spirit behind it is the main thing. I am satisfied that, in the hearts and minds of Europe's leaders, there is an earnest desire to find a way to build an effective European defense system based on the common desire of free people to maintain this freedom.

Q What kind of solution do you expect?

A Well, I am not a prophet or the son of a prophet. It will not be an easy solution. The free world is faced with a threat of Communist domination. The real problem is to get the French and German leaders to see the imperative necessity of forgetting the past. They must lay aside the fears and hates that have been part of their national existence for centuries and learn to collaborate to create a great European unity in the West.

Q Did you find everybody in Europe agreed that there must be some German contribution to Western defense?

A Well, I would not say that everybody is agreed on that. I would say that, by and large, the leaders of the nations that we visited recognize that it is a consummation devoutly to be desired.

Q Does that include Premier Mendès-France?

A After having been a guest in a man's house I do not quote him. But I can say that, in my opinion, all the leaders of Europe are looking for a solution to that problem.

Q Do you think the solution is to admit Germany to the North Atlantic Treaty Organization?

A That is a possible solution. Many of the leaders of Europe believe it is the way out of this dilemma.

Q Are the men with whom you talked agreed that, if Germany is admitted to NATO, it will be necessary to limit German rearmament?

A The opinion of many of these leaders is that there must be a willingness on the part of Germany itself to accept any arms limitations. I believe Adenauer would accept such a limitation if there were no discriminations against Germany.

Q Can Adenauer put that across politically in Germany?

A Not as a limitation to sovereignty. But after sovereignty has been given an agreement to that effect might be worked out.

Q What limitations do you think Germans would accept?

A I have no crystal ball. It is a tremendous problem that Europe is facing. But I believe the pressure of events is going to compel the nations to get together in the unity that is so imperatively needed.

Q Are European leaders to whom you talked optimistic that this problem can be solved?

A They all know that it must be solved. The majority of them agree that they must take a new look at what they were trying to do before the rejection of EDC by the French Assembly. To me that indicates that there is a willingness to give and take mentally in searching for a solution.

Copyright 1954. By U. S. News Pub. Corp.

Basic Idea of European Unity Lives On . . . Revision of NATO Is Urged . . . Big Problem: French Fear of Strong Germany

Q Do you think the solution can be found before the end of the year?

A I think it is essential that a solution be found and found quickly.

Q How long do you think it will take before there is a West German military force supporting Western defense?

A I don't intend to guess about that. It is for the leadership of the nations of Europe now to find the answer. I am sure they are sensitive to the tremendous danger if they leave everything in a vacuum.

Q Did you find agreement that Germany can be trusted with arms again?

A Men like Adenauer and his group and the mothers and fathers of Germany all sense that, if they don't get together with the West, they may get clawed up separately. They don't want to experience what East Germany now is experiencing—Russian occupation. The political concepts of West Germany, its ideas about the rights of the individual show that it is aligned with the West, both spiritually and in the effort to become politically independent instead of simply a stooge state. They feel not only that they can be trusted but that they must demonstrate to others that they can be trusted.

Q Do you feel that a log jam can be broken and European unity and defense be organized?

A The consensus of opinion among Europe's leaders is that the real issue is to find a way for France and Germany to live and work together.

Q How can this be done?

A It will never be done until the leaders of those two countries face up to the issue and sit around a table together to work it out. Adenauer can speak for West Germany on that issue and I am satisfied that he can lead the German people into an agreement. France may have to be represented by spokesmen for various parties to assure that there will be a working majority in the Assembly for the solution that is worked out.

Mendès-France says that there is no majority in the Assembly for EDC. His problem is to find another solution that can command a majority in the Assembly. There has to be a laying aside of specific prejudices in the general interest of the nation, and several parties will have to work together if there is to be a majority on such an issue as collaboration with Germany.

Q You are not inclined then to favor nine-nation talks?

A A mere getting together of nine or 10 nations to blow off steam about their difference would have no effect. It is necessary first to have a basic understanding among the leaders of the interested nations on issues upon which they could agree. Then there could be a conference to iron out the differences.

Q Can this basic understanding be worked out?

A When half a dozen business concerns want to consolidate they don't necessarily start by a meeting of their presidents. Someone goes around first and talks separately to the others to find a common basis of understanding. The presidents meet later to formalize the agreement and get the approval of their stockholders. In diplomacy you may remember the trip around Europe of Colonel House during World War I. It had a similar purpose. If such a person can deal with authorized leaders, agreement can be worked out on fundamentals. All must agree on the imperative need for unity and they must manifest the will to achieve it.

–USN&WR Photo

SENATOR ALEXANDER WILEY

Q Do you think Secretary of State Dulles should undertake such a complete tour of European capitals?

A It is primarily a job for Europeans, although I'm glad the Secretary is taking a hand in the matter.

Q Is that what Eden was doing?

A I hope so. Everyone so far has been talking in generalities. No one has put up any specific proposals. We can't go on forever with general statements on unity. Someone has to put a plan on paper. We all need to get a more concrete idea of what is needed. That is one of the things I have been doing on my trip.

Q What specific areas of agreement have you found among European leaders to whom you talked?

A There is agreement that some way must be found for

(Continued on next page)

. . . "There is no such thing as isolationism any more"

France and Germany to work with each other and with other European countries. Nearly everyone agrees that Germany must have its sovereignty restored. There is agreement that an equitable contribution of military forces should be sought including German forces.

Q Did you find any specific areas of disagreement?

A Disagreement is on methods and on some fundamentals such as the degree of British participation in European defense, how to deal with the French fear of Germany, limitations on arms and so on. There is some thought of amending the North Atlantic Treaty to help solve the problem and perhaps relating it to the Brussels Treaty of 1947. There is a general feeling that using NATO as the vehicle, perhaps with some modifications, might bring the best results.

Q Could NATO be tightened up for this purpose?

A There are various ideas on that. If EDC with its supranational authority is not possible, perhaps something can be worked out that is not "national" but not so "supra" either. The French fear a German national army.

Q How far would the U. S. Senate be willing to go to give an international organization such as NATO more authority over the U. S. programs in Europe?

A I can't comment on that. This is basically a European problem. The U. S. already has done a great deal. The law of self-preservation requires that Europe now show more initiative.

Q Some Europeans, particularly in France, argue that, since they are being asked by the U. S. to give up some of their sovereignty, the U. S. should be willing to do the same. Do you think the U. S. Senate would ever accept that, say in the form of delegating some control over the U. S. armed forces in Europe to an international authority such as NATO?

A It is very questionable whether there could be that kind of a delegation in peacetime of any authority of any size over our U. S. forces. However, in the first World War we had troops that were under the French Supreme Commander, though General Pershing commanded them. In the second World War the British and others put troops under our supreme command. It is quite possible that critical conditions might arise where the command might be delegated without any serious objection. However, the matter of sovereignty could be discussed all day. Everyone of us at times has had to limit our freedom in the interest of a bigger cause.

WOULD U. S. TROOPS STAY?

Q The French have a particular fear of being left alone on the Continent with rearmed Germany. They would like to see a firm commitment from the U. S. to leave a substantial number of troops in Europe as long as the NATO alliance exists. Would this be a possible commitment?

A That is a matter for the executive branch of the Government to handle. The inventive genius of man has made this globe of ours so small that many things we would not have done 25 years ago now become imperatively necessary. I expect that for the foreseeable future we will have limited numbers of American troops in Europe. They are in Europe to help protect our national interest in bases and other installations.

Q Senator, the U. S. has been urging Europeans to unite for four years and they have not united. What do you think the U. S. should do now?

A The U. S. recognizes the seriousness of the situation. The State Department is in this picture right now seeking to make its contribution. We were hopeful that EDC would become a reality. But it is not an American trait to lie down if we don't get exactly what we wanted. We are not going to lie down. We think the future of the world, the peace of the world is at stake. Just because we and the nations that were part of the EDC didn't get exactly what we wanted is no reason to lie down when the threat is more potent than ever.

Q If, despite everything now being done, we fail to bring about European unity and German rearmament, do you think the U. S. will withdraw from Europe?

A There is at present in Europe and in America a group of folks who are preaching the idea of crawling back into our shells. "Neoisolationism" you might call it. But the realities of the situation are such that, while they may preach it, the over-all mentality of America recognizes that there is no such thing as isolationism any more.

We all would wish that we could go back to the days of George Washington. But the physical conditions have changed. We only have nine out of some 30 vital materials in adequate supply on the American continent. In a world conflict we would not have enough man power to handle the situation. My own State of Wisconsin now is nearer to attack than New York City over the great-circle route. With planes traveling anywhere from 600 to 1,000 miles an hour, we must realize that every nation is in every other nation's backyard.

Defenses that were adequate in World War I are not adequate defenses now. Under such circumstances, America will keep on trying to alert the nations of the earth to the necessity of sticking together. If they don't, they'll hang separately. We all know that in unity there is strength and we need strength to defend freedom from Communism.

Q You would rule out then a peripheral or continental strategy for the U. S.?

A Unless some great new inventions that we can't foresee at present were to come into being, I can't see our people agreeing to anything of that character. A segment of them might. Some already have. But not the nation as a whole—it realizes that we cannot put our survival in a hemispheric basket.

Q Some Europeans say the U. S. is so committed by its own security needs to defend Europe that it is not necessary for Europeans to do much. Have you run into that viewpoint?

A I won't say that I have found anything substantial along that line. Those people, of course, are blind. If another world war comes, the battleground will not be confined to any one country. It would be a matter of tremendous destruction for the human race and might set the world back 1,000 years. It is a faulty conclusion on any nation's part that they could keep outside the conflict.

AMERICA'S INFLUENCE—

Q Senator, on this trip have you found that American influence is declining in Europe?

A I am glad you brought that up. I have traveled, sir, from Norway to Helsinki down to Stockholm, from there to Brussels and The Hague, from The Hague to Vienna and back to Baden-Baden to see Adenauer, from there to Bonn, from Bonn to London, from London to Dublin and Belfast, from Belfast to Paris. I have found everywhere from statesman to common man a sincere appreciation of America's con-

(Continued on page 40)

As New Machines Go In—*Look Out* for Electrical Overload

As YOU ADD lights, extend feeders and replace old machines with new ones that use larger motors, you may overload your plant's electrical system. An overloaded electrical system cannot deliver full voltage to all your modern machinery. Here's the result:

Typical Losses from Low Voltage

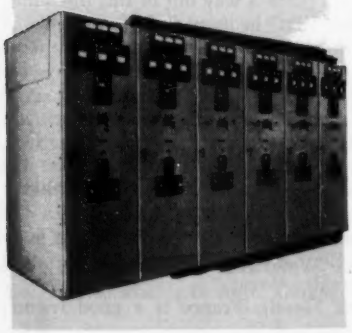
- When voltage drops 20%, motor torque drops about 40%.
- When voltage drops 10%, output of infra-red dryers drops 19%.
- Every 5% drop in voltage increases motor heating nearly 10%.

Allis-Chalmers load center substations often provide the most economical means to modernize a plant's electrical system—assure full voltage and full power to all equipment.

These packaged units contain all necessary transformers, breakers and meters. They bring high voltage power to the load center—reduce length of low voltage cable. Their complete metal enclosure modernizes plant appearance—protects personnel. They are easy to install and may be added to or moved as conditions change.

Make sure that your plant's electrical system keeps pace with your growth. Your nearby Allis-Chalmers office will gladly help. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Allis-Chalmers load center substation—one way to correct electrical overload.



ALLIS-CHALMERS

C-5663

. . . "Little need for economic aid—patient has recovered"

tribution to rebuilding and rejuvenating not only our allies but our enemies. Our influence is not waning. There is evidence of great affection.

However, let us be frank. The nations have come back. They recognize that we have resuscitated them. But they are independent human beings as we are, and they expect to be treated as proud peoples. That's the way I interpret this so-called "loss of influence." If I were at liberty to tell you what some of the big men of Europe have said to me, you would find this: Instead of a loss of influence, there is a great, great hunger to know that we are standing firm and together with them. They want no doubt on that.

Q Is it your feeling that American aid still is necessary?

A We are talking about the immediate future. I would say that military aid should continue for a time at least. There is very little need for any economic aid because the patient has recovered.

Q What about aid in the form of the U. S. troops in Europe. We have about 300,000 soldiers and airmen in Europe. Can that be reduced?

A Until the differences that we hoped would be settled by EDC have been settled by another means, we can expect that Britain and the U. S. will have forces in Europe. If, on the other hand, another plan is worked out, it may be possible that some of our forces can be withdrawn immediately after that plan goes into effect. However, in most places there is no real desire to have our forces withdrawn.

Q You found that true of France and Germany both?

A Yes. They realize that the forces not only give assurance that the Kremlin had better not start something, but there is also an economic value that results. Our forces are paid well. They spend money and it adds to the prosperity of every community wherever they are.

In Bonn, at a press conference for a large number of German reporters, I asked how many would like to see American troops leave Germany. Not a hand was raised. In Vienna, Foreign Minister Figl specifically asked that American troops not leave Austria before the Russians do.

FEAR OF AGGRESSION—

Q Senator, you have visited Europe many times. Have you felt this time that there is less fear of Soviet aggression than there was earlier?

A In some places, yes; in others, no. In general, the feeling is that there is no immediate need to fear that the Kremlin will decide to strike through Europe. It's felt that the Soviet plan is to use their stooges and satellites to stir up trouble as in Korea, East Berlin and Guatemala until it is ready to strike. And, when the Soviet is ready, it will strike where it suits its interests best.

Q Is a desire growing in Europe to reach an agreement with the Russians for "peaceful coexistence"?

A There is some evidence of it in the newspapers and by the trip of certain British representatives to Russia and Communist China. There is always in men's breasts the hope that you can treat with the adversary and find a basis for agreement. I have found European leaders sensitive to the fact that such an agreement would only be a temporary living together. They realize that, if and when the time is ripe, the Kremlin will pursue its plan for world domination.

Q Do you find French leaders tempted by the idea of an arrangement with Russia to neutralize Germany?

A The leaders to whom I have talked realize the danger of seeking such an agreement with the Kremlin. It is clear from the press that there are some few Frenchmen who would like to see such a deal. They are blind to the realities. If 70 million Germans were left neutralized in the heart of Europe, there would be a dangerous situation that would end in another explosion.

Q In Germany itself were people more interested in unifying their country than in joining with the West?

A The Germans are vitally interested in unification of Germany, but they also are vitally interested in remaining with the West. I was informed on the highest authority, incidentally, that, if there were a free election, 95 per cent of the Germans in the East would vote for joining the West.

Q Are the French in a position to block return of German sovereignty or rearming of West Germany?

A I don't think that any nation should attempt to do that. I feel that France will be one with Britain and ourselves to create an arrangement, perhaps under NATO, where Germany can play its part.

DANGER WITHOUT FRANCE—

Q If the French continue to delay, can effective defense of the West be organized without France?

A It would be very difficult and would create a schismatic condition that might bring dangerous results.

Q Is it your opinion that both France and Germany are necessary to this program?

A I have no doubt about that. The stumbling block is Franco-German antagonism growing out of centuries of conflict. But, in this new world of A-bombs and H-bombs in which science has annihilated space and time, hate must go out the window. We must create a unified force to preserve our own civilization.

Q Senator, you had a long talk and dinner with Premier Mendès-France. What kind of man did you find him?

A I had never met Mr. Mendès-France before. I found him a good conversationalist. He seemed to be a gentleman in every respect. I attempted to pierce beneath his very clear statements and I am satisfied that he desires to serve the interests of France. He knows that Europe is in a critical situation. But he also senses that in France there are so many political parties that it is difficult at present to obtain a majority for any specific plan. He is waiting to see whether talks with Eden and others will point a way out of this dilemma.

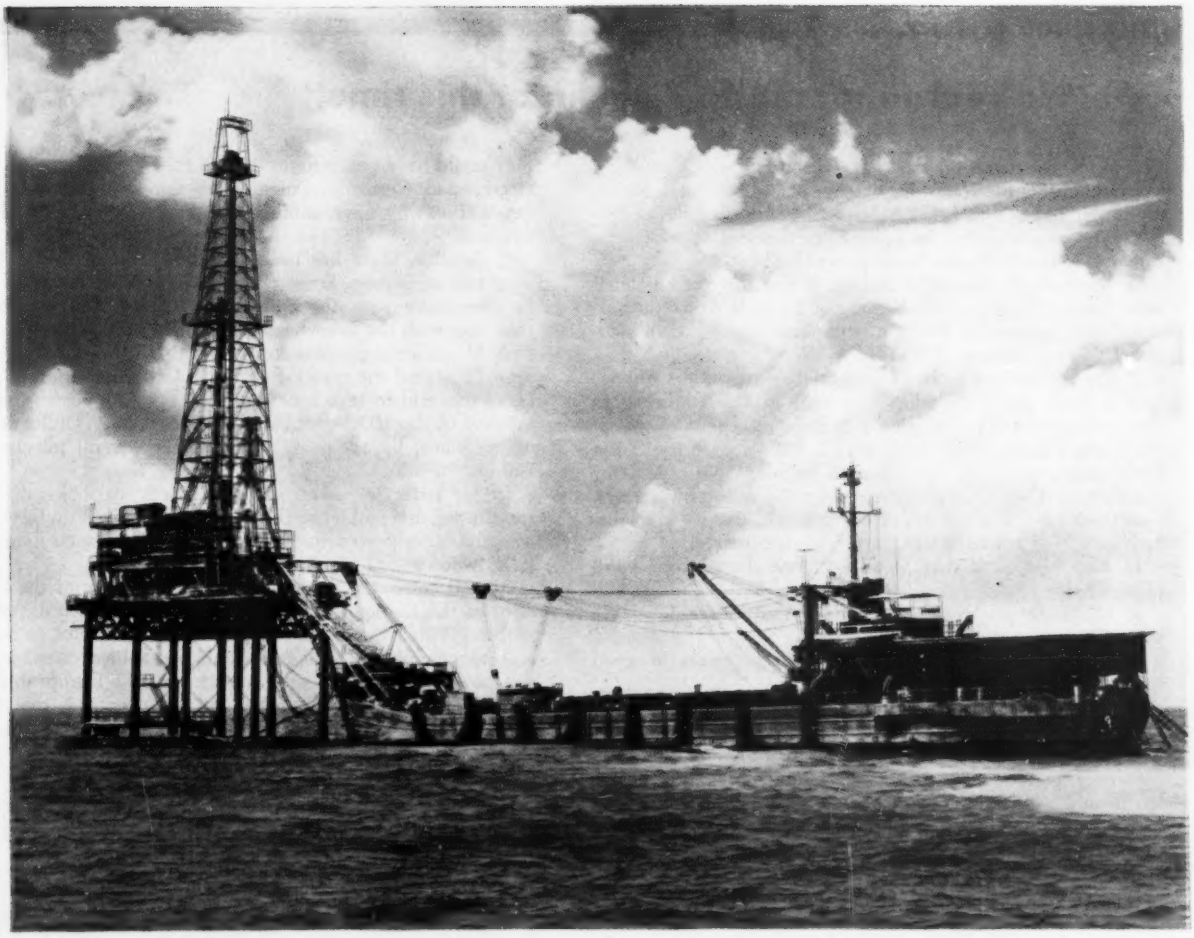
He is certain that EDC in its present form could not pass the French Assembly. However, he feels that the spirit of EDC, which is a plan to unite the West, still lives. I enjoyed having dinner with Mendès-France and his distinguished associates. I found them all very pleasant and agreeable.

The only question I have in my mind is whether or not some of the statesmen are so close to the forest that they don't see the trees. The question of the over-all threat of the Kremlin to us is very patent. I am sometimes a little perturbed about the situation because the French for generations have fought the Germans and may not realize that there now is another, greater threat.

Q Do you think Mendès-France is a good friend of the U. S.?

A He told me, and this I believe I can quote, that he was indeed a friend of the United States. He said that one basic

(Continued on page 42)

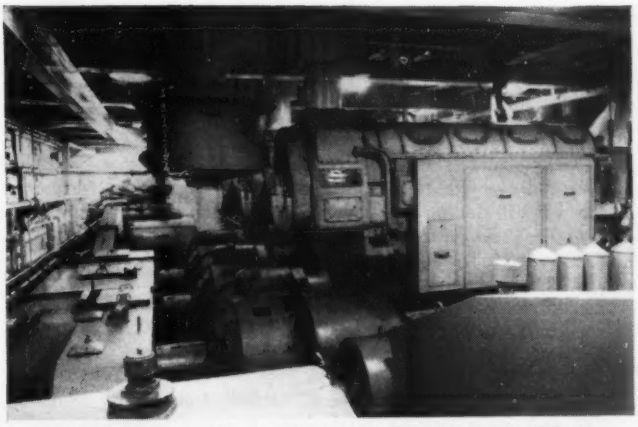


Oil and mud in 11 fathoms of water

You would hardly expect *mud* to be so vital a part of drilling for oil out in 67 feet of water. But actually it is—requiring the most power of any operation on the Gulf Oil Corporation rig.

That power—2250 horsepower—is supplied by three Fairbanks-Morse Opposed-Piston Diesels. They drive three pumps that force a jet of mud down the well at such high velocity that it actually produces a part of the drilling action.

Dependable power, produced economically, is the contribution made by Fairbanks-Morse Diesels on this, America's newest frontier—the tidelands. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.



The 2250-horsepower Opposed-Piston installation that meets the highest power requirements on this off-shore drilling operation for the Gulf Oil Corporation.

FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • RAIL CARS • ELECTRICAL MACHINERY • PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

. . . "No reason to talk to Kremlin at this time"

reason for his friendship was that, when he was in the underground fighting the Nazis, his wife and children found asylum in the United States.

Q Did you find that he believes in the idea of European union that the U. S. has been promoting?

A His over-all concept, I believe, is that there is a definite need for unification of the West. But he feels there must be a sufficient guarantee that the overwhelming power of Germany will not become dominant.

Q Do you believe he has any special sympathy for Russia?

A I don't think anything was said in the conversation that would permit me to give a definite answer one way or the other. I believe Mendès-France is like us Americans. We have no quarrel with the common people of Russia. They want peace. They want a chance to develop and grow. Americans don't hate, and we don't carry grudges. But we are satisfied that the Kremlin is out for world domination.

Q And you found that Mendès-France shared your point of view?

A I have every reason to believe that he realizes the threat.

Q How did you find Churchill? Did he seem in good spirits—in good health?

A Yes, in good health and wonderful spirits. On the veranda at Chartwell just before lunch, we looked out at the hills of Essex and talked about the continuity of life. Life goes on. There is really no death. I told him a new planet has been discovered so close to the earth that life must exist there. According to one report, it is only 800 miles rather than millions of light years away. Churchill replied, "When I go I'd like to go more than 800 miles away."

Q Was Churchill gloomy about the future after the defeat of EDC?

A His view is that we must find another answer.

Q Did he mention his old plan of having a talk with Russia's leaders?

A He didn't discuss that subject.

Q Did you get the feeling that the British were ready to take a more active part in Europe?

A The British sense that they've got to take a new look, and I urged them to do just that.

"REMARKABLE" ADENAUER—

Q When you saw Adenauer, did you find him pessimistic about the future?

A Adenauer is one of the most remarkable men that I have met. I did not find him pessimistic. He recognized that the sun was still shining and that there was much reason for hope.

Q How do you interpret Adenauer's electoral defeat in Schleswig-Holstein?

A I accepted Adenauer's interpretation that the results are not too serious. The issue seems to have been that the Socialists urged another negotiation with the Kremlin on the unification of Germany and the majority voted for that. I have no objection myself to negotiating with anybody anywhere who indicates by his acts instead of simply by words that he means business. So far, the Russians haven't shown by their acts that negotiation would be worth while.

Q You agree with Adenauer that there's no point in talking to the Russians at this time?

A I see no reason to talk to the Kremlin at this time. I don't know what you could talk about. If they wanted peace, they could have peace tomorrow. If they would agree to free elections in Germany, Poland and Korea, those would be deeds. But why have another conference otherwise and get nowhere?

Q Senator, there has been some criticism in the U. S. of your trip to Europe. Some critics have implied that you may be competing with the Secretary of State. Did you make your trip with the knowledge of the State Department?

A My original purpose in planning this trip was a double one: To attend the meeting of the Interparliamentary Union in Vienna and to take a new look at the European situation in view of the EDC problem. When Secretary Dulles heard of my plans, he asked me to undertake several missions in Europe for him.

In his letter he asked me specificially to look into European-defense problems, the operations of the Foreign Service, and alternatives to EDC if, as then seemed possible, EDC were to fail of ratification.

As you know, the Senate takes a serious view of the functions of the Foreign Relations Committee. The world now is so complicated that I have divided the Committee into several subcommittees, one for each geographical area, and I am the chairman of the subcommittee for the European area.

Under our system of checks and balances it is the function of the executive branch to handle foreign relations. But the Senate and its Foreign Relations Committee have a vital role to play.

I might say that there has been some criticism in Europe of my trip. The Communist papers in Helsinki called me "the American traveling agitator." In another city the Communists said I was a "representative of the warmongering circles in the United States." In London, the *Daily Worker* came out with a big picture captioned "Wiley—a Dangerous Man" and a headline that said, "Wiley Is in London to Rearm the Nazis."

Criticism doesn't disturb me at home or abroad. It's a good thing for all of us now and then. It is wise, however, for the critics to get the facts before they spout.

Q Senator, did any European leaders ask you about the junior Senator from Wisconsin?

A Yes, I was asked several questions about Senator McCarthy. My comment was that he is a controversial figure in Wisconsin. He's been a controversial figure everywhere I go and I find him a controversial figure in Europe. In view of the fact that I have so many controversies of my own to look after, I leave his controversies alone.

WHERE CONGRESS STANDS—

Q Senator, you've spoken about what you have seen and heard in Europe. Could you say what you said to European leaders about the attitude of Congress toward recent events?

A In a number of instances I stated plainly that there was a resurgence of neoisolationism in the U. S., but that it was minor in character so far. I added that the action of the French Assembly in voting down the EDC might operate to accentuate neoisolationist sentiment. Therefore, I felt it was necessary that definitive action be taken quickly to find an alternative. I pointed out on several occasions that in my own Committee a move to cut off all aid to European nations that had not ratified EDC failed of passage by only one vote. As it was, the Congress did pass a law to block all 1954 and 1955 aid appropriations for nonratifying countries.

How to cut the cost of getting acquainted

Most corporations, at some time, require the services of an engineering company, a management advisory company and a securities underwriting company.

Whenever such outside assistance is retained, there is a get-acquainted cost; it is necessary for both organizations to get to know the other's people and the other's way of doing business. Moreover, the serving company must investigate the conditions surrounding the task it is given to do—must gather basic facts, many of which are fundamental to a number of the employing corporation's problems. All of this takes time—time which is paid for by the employing company.

When Stone & Webster is retained, this get-acquainted cost is paid only once. By working with one Stone & Webster company, the employing corporation becomes acquainted with the underlying business personality of an engineering company, a management advisory company, and a securities underwriting company. Of course, there is never any obligation to employ another Stone & Webster company, but by following this course, the employing company knows three organizations whose services it is likely to need some day.

When you have need of any of these services, why not write us and arrange an interview with our executives?

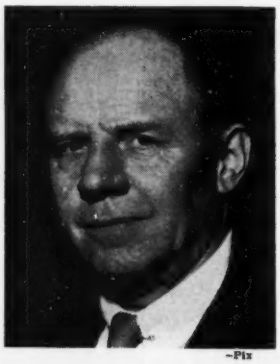
STONE & WEBSTER, *incorporated*

STONE & WEBSTER ENGINEERING CORPORATION
STONE & WEBSTER SERVICE CORPORATION
STONE & WEBSTER SECURITIES CORPORATION
90 BROAD STREET • NEW YORK 4, N. Y.
STONE & WEBSTER CANADA LIMITED, 44 KING STREET WEST, TORONTO

THE MAN .. Robert Murphy **THE NEWS** .. Trouble Shooter

An Old Hand Prepares Way For New Policy in Europe

Behind the scenes in the search for a new European defense plan is a veteran U.S. trouble shooter, Robert Murphy. Mr. Murphy is in Europe, probing the snags that killed the European Army.



—Pix

ROBERT D. MURPHY has gone abroad on another touchy mission, this time to hunt down the troubles that are keeping Europe from completing its defenses. Mr. Murphy is one of America's top diplomats, an ace trouble shooter. As Deputy Under Secretary of State, after more than three decades of foreign service, he holds a job that spans the whole range of U.S. foreign policy.

Now Mr. Murphy is touring the sensitive spots in Western Europe, poking into the difficulties that are preventing Europe from replacing the stillborn European Defense Community with a security arrangement that will avoid unarmed stretches in the long defense lines.

In a sense, he is doing the behind-the-scenes spadework on the "agonizing reappraisal" warned of months ago by Secretary of State John Foster Dulles—a new look at United States defense strategy in Europe.

As usual, Mr. Murphy's first contacts brought quick results. A few days after he had talked to Germany's Chancellor Konrad Adenauer, Secretary Dulles made a flying trip to Bonn and London. Next trouble spot for Mr. Murphy: Trieste, key point of dispute between Yugoslavia and Italy.

Mr. Murphy's assignment was born in the period of listless mourning that followed French rejection of plans for a European Army.

At the State Department, Mr. Murphy became deeply absorbed in the twin enigmas: What, if anything, would France accept now in the way of German rearmament? How long would the Germans be willing to stand, like a hitched horse, waiting to be taken into the Western team as an equal partner?

Knowing well the course of Soviet scheming, Mr. Murphy also was deeply concerned lest the French drift into an alliance with Russia, if only to keep Germany neutralized. And he feared that, in time, Germany might look eastward to obtain reunification of the country, even at the price of doing without an army and a Western alliance.

Time, Mr. Murphy felt, was running out. Secretary Dulles, then tied up with Far Eastern matters, agreed. Mr. Dulles thought, too, that Mr. Murphy himself was the man to take a hard inside look at all the stubborn snags in European defense.

In background, appearance and approach to this or any job, "Bob" Murphy is the opposite of the popular picture of a striped-pants career diplomat.

A big man with a wide smile and a candid way of talking, Mr. Murphy worked his way through Marquette University and got a job, in 1917, as a temporary U.S. consular clerk.

Mr. Murphy toiled for 16 years in the consular service, bringing up a family that included three daughters on a salary of about $4,000 a year. He had no income from private sources, has none now.

Even then, Mr. Murphy rubbed shoulders with one source of immense future trouble. Serving in Munich in the early '20s, he lived across the street from a noisy fellow named Adolf Hitler. Frequently Mr. Murphy could hear violin and piano duets, performed by Hitler and his fat friend, Putzi Hanfstaengl.

In 1923 Hitler pulled off his "Beer-Hall *Putsch*." When it failed and Hitler went to jail, Mr. Murphy reported to Washington his view that the man was washed up. He was joined in this judgment by the Papal Nuncio, Eugenio Pacelli, a close friend. Archbishop Pacelli also wrote off Hitler, in his dispatch to the Vatican.

Mr. Murphy likes to tell how, 21 years later, he had an audience with Pope Pius XII—his old friend Pacelli—after the fall of Rome to the Allied forces. The Pope, with a twinkling eye, chided him: "Now, Robert, not a word about papal infallibility. Remember Munich."

The real break in Mr. Murphy's career came in the late 1930s, when he was in the Embassy in Paris. William C. Bullitt, then President Roosevelt's Ambassador

(Continued on page 46)

—Wide World

WITH EISENHOWER IN BERLIN, 1945
Touchy problems are nothing new

(Advertisement)

Report on Soviet Russia:

"I paid $1.00 a gallon for State-produced gasoline"

by Foreign Correspondent
EDDY GILMORE

I don't consider myself an expert on Russia's oil industry. I mean I don't possess a lot of fancy figures and percentages, but:

After nearly 12 years residence in Moscow and travel from one corner of that vast country to the other I come away with some very definite impressions on the Soviet Union's oil industry and ours.

I figure I bought 14,440 gallons of Russian gasoline, 160 gallons of Russian kerosine and as little Russian motor oil as I possibly could.

My cars were filled with state-produced gasoline because I couldn't get any other kind. I know nothing about octanes, but I know all my cars* developed engines that knocked. In the depth of winter the carburetor often froze.

"Why?" I asked our Russian driver.

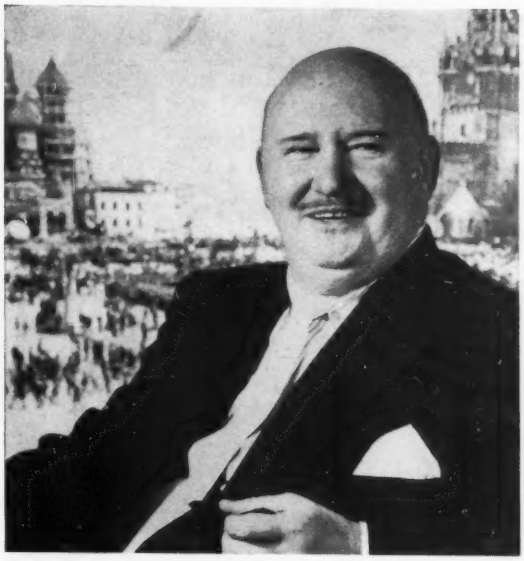
"Because," he answered, "we've got water in our gasoline."

For this watered gasoline I paid about $1.00 a gallon and when I had to buy it on the black market I paid a good deal more than a dollar.

The kerosine burned all right, but it wasn't always easy to find. And when I did find it I had to haul it home in my own bucket or can. I do know it smelled to high heaven.

I didn't buy Russian oil for my cars because all the chauffeurs I knew advised against it. Fortunately, I was able to buy American oil from abroad and have it shipped in. But not always. Sometimes we'd get caught short and be forced to go on the Russian market.

The chauffeur would shake his head.



Eddy Gilmore, a Pulitzer Prize winner, has just completed nearly 12 years in Russia covering the Kremlin for the Associated Press. His book, "Me and My Russian Wife," is a recent best seller.

"We're going to have trouble, Gospodin,"** he would say.

And we usually did.

I have seen the oil wells of Baku. More of them at Gurev, at the northern tip of the Caspian Sea. I've ridden oil barges on the Volga. I've stood in long lines, when the mercury was flat on its stomach in the cold of a ssian winter, to buy kerosine.

I saw Russia get desperate for oil during World War II. In those days they even imported oil machinery from the U. S. and brought in American oilmen to show them how to operate it. They must have a high opinion of the American petroleum industry. After 11 years and 9 months in Russia I know I have.

**I say "my cars." I had 9 automobiles during my time in Russia. They were used principally for business, but sometimes for pleasure.*
***Gospodin means "Mister" in Russian and that's what any polite Russian calls a foreigner.*

This report on Russia's oil industry is presented for your information by the American Petroleum Institute, 50 West 50th Street, New York 20, N.Y.

Imagine picking up a convenient, familiar phone, right on your desk, and *talking* work away without delay! That's EDISON TELEVOICE . . . the modern *phone* network method that delivers dictation to her desk and cuts costs 47% in *any* busy office with 3 or more dictators. It's economical. It's fast. And so-o easy! No wonder thousands of new users are turning to it every month!

You can try TELEVOICE on lease or conditional sale—and you can *save as you pay* with a liberal 3-year Pay Plan. Rent or buy—you save either way! Free analysis and report by an Edison expert will show you how your office can save with TELEVOICE . . . the *smartest* thing in phone dictating.

5

Get FREE Book about TELEVOICE, the nation's 3-to-1 favorite

That (new) fashioned phone dictation is

Edison Televoice

Thomas A. Edison, Incorporated
74 Lakeside Avenue, West Orange, N. J.
Please send me "5 BIG BENEFITS" Book

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

SEND HANDY COUPON for book or phone EDISON representative listed under EDISON VOICEWRITER

Thomas A. Edison
INCORPORATED
ALSO MAKERS OF THE FAMOUS EDISON NICKEL-IRON-ALKALINE STORAGE BATTERY

"Murphy's fifth column" softened way in Africa . . .

to France, was impressed with his ability. Over State Department objections, he jumped Mr. Murphy to the post of Counselor.

This promotion led directly into the most exciting and controversial episode of "Bob" Murphy's career—his top-secret mission from the President to prepare the ground for the Allied invasion of North Africa.

After the fall of France to the Germans, Mr. Murphy had stayed on as Counselor at Vichy, maintained friendships with the men around Marshal Pétain. Then he was sent to North Africa, primarily to combat growing Nazi pressure for control of the vital French naval and air bases there.

Mr. Murphy helped work out an agreement, in 1941, for delivery of U. S. nonmilitary supplies to North Africa. He traveled around the countries, making new friends everywhere among French military and civilian officials. And he established nearly a score of U. S. agents in key spots, in the guise of "food experts."

These agents, sometimes known as "Murphy's fifth column," kept a close watch on the activities of the Germans and Italians. Under Mr. Murphy's direction, they quietly worked toward the goal of insuring the minimum amount of resistance when Allied forces hit the North African beaches.

Clandestine radio stations were established, for communication with Allied headquarters. Contacts with the local French commanders were established with difficulty, for they had orders to resist invasion from any source, and they were most doubtful of the success of any Allied expedition.

High-level deals were negotiated by Mr. Murphy, acting under orders from Washington and from Gen. Dwight D. Eisenhower at Supreme Allied Headquarters in London.

Using the *nom de guerre* of "Lieutenant Colonel McGowan," Mr. Murphy was on the inside of the complex negotiations involving General Eisenhower, Gen. Mark Clark, French Gen. Henri Giraud, who had managed to escape by rope ladder from the German fortress of Königsberg and, finally, Adm. Jean Darlan, the French Commander in Chief.

The tall figure of "Colonel McGowan" was waiting on the beach near Algiers to meet the submarine carrying General Clark for his rendezvous with friendly French officers, in October of 1942.

And it was Mr. Murphy who, in the early hours of D Day, November 8,

. . . Lack of French resistance saved 16,000 Americans

presented Admiral Darlan with the *fait accompli* of invasion and, after hours of bitter wrangling, talked the Admiral into a cease-fire and armistice agreement. But, before he succeeded, Darlan had angrily ordered Mr. Murphy thrown into jail, a machine gun at his back.

Criticism of Mr. Murphy for the so-called "Darlan deal" was widespread for months in some American and Allied quarters, influenced by the Free French propaganda of Gen. Charles de Gaulle. However, Secretary of State Cordell Hull stood stanchly behind his envoy and Mr. Murphy received the Distinguished Service Medal from General Eisenhower for his accomplishment.

It was estimated officially that the lack of effective French resistance to the landings saved between 16,000 and 18,000 American lives.

From North Africa, Mr. Murphy went on to Italy. Again he was criticized in some circles for dealing with rightists and ex-Fascists under the Badoglio regime. But Italy stayed with the West.

When the Allied forces moved across Europe and into Germany, Mr. Murphy served as General Eisenhower's political adviser. He stayed in Germany to act in the same capacity to Gen. Lucius Clay. Through the 1948-49 Berlin "air lift," Mr. Murphy's dark-blue Homburg was a symbol of friendship to the hard-pressed citizens of Berlin.

As much as anyone, he was responsible for the political transition of the West Germans from the status of defeated, occupied people to friends and potential allies of the U. S.

"Cold war" diplomacy. From 1947 to 1949, Mr. Murphy represented the U. S. at the unproductive Big Four meetings with the Russians, got an analytical view of the Soviet diplomacy developing for the "cold war." Then, after a brief stay at Brussels, he became the first postwar U. S. Ambassador to Japan.

A little less than a year ago Mr. Murphy returned to Washington, to his present job.

He had had no annual leave for a dozen years. But he pitched into a seven-day work week in Washington, seldom leaving his office before 7:30 in the evening.

Mr. Murphy has not taken one day's leave since his return. But he accepts that kind of work as a matter of course. If he has any obsession at the age of 59, after a long uphill career, it is to help build a U. S. Foreign Service corps that will attract and hold the best young Americans.

Twice as useful, the "V. P." EDISON VOICEWRITER gives you round-the-clock dictation service—in the office or away. Like a high-speed camera, the EDISON-engineered V. P. goes where you go, always ready for action.

Simple accessories permit *transcribing* as well as dictating—a *complete*, economical dictation service in one slim, trim, double-duty marvel. Handsome? Sure! But rugged, too. With a years-ahead design for years of action, the V. P. saves money when you buy it—and saves more as you use it. Easy Pay Plan costs less than $12.00 a month.

You can rent it or buy it . . . but, above all, *try* it!

FREE 12 page Book tells all about the pace-setting V. P. EDISON Voicewriter.

That (new) fashioned dictating instrument is

VP EDISON VOICEWRITER

SEND for booklet or phone local representative listed under EDISON VOICEWRITER . . . for fast, free desk-side demonstration!

Thomas A. Edison

ALSO MAKERS OF THE FAMOUS EDISON NICKEL-IRON-ALKALINE STORAGE BATTERY

Thomas A. Edison, Incorporated
75 Lakeside Avenue, West Orange, N. J.

O. K., send me "GET ACTION ON THE GO!"—no obligation.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

George T. Baum, Construction and Service Manager of Carrier Corporation, tells why he's . . .

The man who raced the thermometer!

"This summer really put the heat on us," says Carrier Corporation's George Baum.

"Take a phone call we got from Chicago: refrigeration machinery stopped – and the mercury going up on 70 tons of expensive beef! Or a theatre is without its air conditioning; a laboratory's vital supply of penicillin is in danger.

"We raced those rising thermometers – and beat them – with Air Express!

"To back up our local stock depots, we maintain one *complete* inventory of over 15,000 different parts in Syracuse. From May to September, Air Express handled 15 to 20 shipments a day for us, from a 1 oz. gasket to a 900 lb. rotor.

"With more Carrier air conditioning and refrigeration in service than any other make on earth, Air Express plays an indispensable role in preventing emergencies – and in meeting the inevitable few.

"Yet the average shipment costs *least* by Air Express. 25 pounds from Rochester to Chicago, for instance, is $5.65. That's $1.20 *less* than the next best price for any air service – and Air Express service can't be beat!"

Air Express

GETS THERE FIRST *via U.S. Scheduled Airlines*

CALL AIR EXPRESS . . . *division of* **RAILWAY EXPRESS AGENCY**

Worldgram®

FROM THE CAPITALS OF THE WORLD

LONDON....BONN....PARIS....

>> Anthony Eden, Britain's Foreign Secretary, thinks he has found the formula under which West Germany can rearm and help defend Western Europe. This is why Mr. Eden made his whirlwind tour of European capitals. It is also the reason why Secretary of State Dulles made his unexpected trip to Bonn and London.

>> What Eden has done is to dust off a treaty that most people had forgotten.

The Brussels Pact, Eden is saying, offers a way to rearm West Germany that France can accept without any more agonizing. This pact, signed in 1948 by five nations--Britain, France and the Low Countries--was actually the forerunner of the 14-nation Atlantic Pact, signed a year later and including the U.S.

Eden's idea is that, since France balked at taking West Germany into the Atlantic alliance via EDC, the European Defense Community, maybe the French will let the Germans in through the side door of the Brussels Pact.

In other words: The Brussels Pact is Eden's emergency substitute for EDC, which the French invented in 1950 and wrecked in 1954.

>> Eden's reasoning, as understood in London, goes this way:

Britain and France are both members of the Brussels Pact, on equal footing. This might satisfy the French complaint that Britain stayed outside EDC.

France, under a revised Brussels Pact, can count on Britain, along with Italy and the Low Countries to check possible German domination. This should quiet French fears of being left alone with a powerful Germany.

France's veto, within the Brussels Pact, is just as big as Germany's will be. In addition, France also has a veto in the Atlantic Pact.

These points, in Eden's view, ought to allay French fears.

>> But there are a couple of flaws in the Brussels Pact. One flaw is that the pact was originally intended to provide defense against German aggression. This original intention will have to be modified to provide defense against Russia.

Another flaw is that the Brussels Pact has no defense machinery. It fell apart when NATO, the North Atlantic Treaty Organization, took over defense of Europe. The Brussels powers have to rely on NATO if attacked.

Eden's program recognizes all this. His plan is to use the political appeal of a revised Brussels Pact together with the military machinery of NATO in order to rearm West Germany under safeguards that France will settle for.

>> The safeguards are, of course, the things both French and German diplomats will look at most critically, and from opposing points of view.

Safeguards now under discussion include these: A promise by the U.S. and

(over)

Britain to keep troops in Europe as long as necessary. A ban on manufacture by West Germany of atomic weapons or jet planes. A ceiling on the size of Germany's Army. An inspection system by NATO to keep German rearming within limits.

Chances are that these safeguards will monopolize conversation when the diplomats of nine nations--the five Brussels powers, plus U.S., Canada, Italy, West Germany--meet to decide for or against Mr. Eden's plan.

>> In London, Eden's associates regard his headlong tour of Allied capitals as a smart, dramatic move, gaining prestige both for himself and for Britain.

The Eden plan to convert a 1948 treaty of defense against Germany into one that puts Germany and France in double harness is applauded as ingenious.

Cost to Britain isn't much. Politically, the plan nudges Britain somewhat closer to the continent of Europe. But in hard-boiled military terms, Britain can continue to use the flexible machinery of NATO, which permits London to have a big say in the disposition of British arms and men in Europe.

The Eden strategy is to reassure Europe of Britain's intentions, to offer West Germany equality through the Brussels Pact, and then in NATO to set up limitations that will satisfy France without disturbing Britain's influence.

It's a way to patch up the Western front in Europe with Britain giving some new help, but not too much. Diplomatic observers in London size it up as a well-staged political gesture. Whether it will work is another question.

>> People in Europe are beginning to wonder if Allied teamwork is quite as smooth as it used to be. In the past, it was customary for the diplomats of U.S., Britain and France to get together, quietly, and agree on what to do.

Now, on the major issue of German rearmament, top Allied diplomats seem to be flying solo, rather than in formation. Eden rockets off to Brussels, Bonn, Rome and Paris, by himself. Dulles soars off alone to Bonn and London.

Europeans find the solo performances interesting, and often exciting, but they are asking if this means the Allies are tired of working as a team.

>> What excites the Paris press is that Secretary Dulles, on his latest trip to Europe, visited London and Bonn but not Paris.

Communist editorials have it figured out that Dulles is "blackmailing" France, trying to force France to submit to West German demands.

Neutralist papers suspect Dulles wants to spike Eden's plan.

Pro-American papers express more sorrow than anger. "Deplorable, but not surprising," says one, aware of French responsibility for the crisis in Europe. "A slap in the face," says another pro-American paper. It's "proof once more," a third observes, "of the remarkable lack of psychology in American diplomacy."

>> London's press was in some cases even more indignant than the Paris press.

What London papers emphasized, however, was the fear that the Dulles "snub" of Paris might so enrage the French as to endanger the Eden plan. London seemed primarily concerned with Eden, rather than with any hurt feelings in Paris.

>> The point, not yet fully realized in either London or Paris, is that the U.S. Congress is near the end of its patience on the issue of West Germany and European defense. U.S. officials can't defend much more delay. Dulles, visiting Bonn but skipping Paris, was trying to shock the French into action.

Introducing . . . the all-new Burroughs Ten Key adding machine

Now, Burroughs offers you a new standard of operating ease and convenience in ten-key adding-subtracting machines. Lightweight and compact in design yet durably rugged in construction, the Burroughs Ten Key is new all through, with scientifically positioned keyboard and controls . . . light-touch quick-action keys . . . cushioned-quiet electric operation. See it today and you'll agree—this great new Burroughs is truly the finest of ten-key adding machines. The yellow pages of your telephone directory list your nearest Burroughs dealer or Burroughs branch office.

Burroughs Corporation, Detroit 32, Michigan.

THE GROWING TREND TO LINCOLN

Take the wheel of the performance champion

THIS is your view when you're sitting in the car automotive experts agree is the finest performer on the road today. (Tom McCahill, writing in *True's Automotive Yearbook*, states, "In my book these are the best cars made in America...Lincoln is the champion over the road.")

Further proof is a matter of record. For the fourth straight year Lincoln won in its class in the Mobilgas Economy Run. And twice in a row Lincoln won *the first four places* over all stock cars in the grueling Mexican Pan-American Road Race.

There are many reasons why Lincoln's performance cannot be matched today.

First of all, there is the great Lincoln V-205 power plant with its new 4-barrel carburetor, new automatic spark, and new, balanced breathing design. Also—the tremendous advantage in cornering and all-round handling given by ball-joint front wheel suspension (exclusive with Lincoln in the fine car field). And other Lincoln performance advantages: a precision-balanced chassis for a more stable ride, and the largest brake area of any American car for safe stopping.

Won't you discover Lincoln's performance on your own? Visit your Lincoln dealer—and take the wheel of a Lincoln or a Lincoln Capri.

LINCOLN DIVISION • FORD MOTOR COMPANY

LINCOLN

DESIGNED FOR MODERN LIVING
POWERED FOR MODERN DRIVING

SHOCK ABSORBER FOR BUSINESS

Tax Refunds Give a Lift When It's Needed

Businessmen don't lie awake nights worrying about a sudden setback as they once did.

Reason, in large part, is that Government now stands ready to share business losses, as well as business profits.

New law lets businessmen average losses, for tax purposes, over an eight-year period. That can mean big tax refunds any time business goes sour.

A major mystery of the present period of recession is why businessmen have remained so confident amidst all of the foreboding and cries of alarm.

When business activity slowed, industry pushed ahead with expansion plans. Dividends have held high while profits in some lines sagged. Among all groups, businessmen have remained the most cheerful, even though they often are the first to show alarm when times change.

It now appears that much of this mystery can be cleared. The optimism lies in the new tax law—with its plan for some degree of depression insurance.

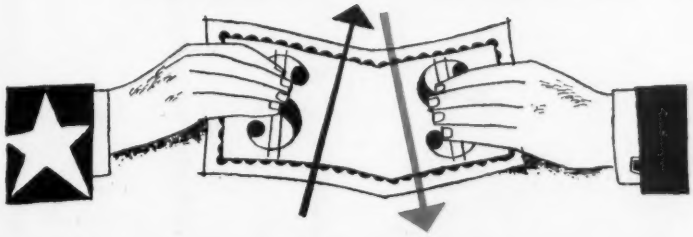
The Government from now on is to be more liberal in sharing any losses that business may have to take in the future. Some of the risks in venturing are being removed. In past years, Government insisted on sharing profits—through high taxes—when times were good, but required businesses to take their own losses. Now, when a firm runs into hard times, the Government even goes so far as to pay back some of the taxes collected in prosperous years.

The Government also will go along with business for a considerable time when a company tries to recoup any losses that come from a recession.

The device that adds to business confidence is known technically as the "carry-back and carry-forward" of operating losses. This means that losses suffered in any one year can be carried back and deducted from profits in an earlier year. That results in a refund of taxes paid for the earlier years. Then, if the losses have not all been deducted from past earnings, they can be used to

(Continued on page 55)

HOW GOVERNMENT SHARES BUSINESS RISKS



IN 1954 a company makes

$150,000 in profit and pays $72,500 in income tax . . . . . .

IN 1955 another

$150,000 in profit is made and $72,500 is paid in tax . . . . . .

IN 1956 the company suffers a

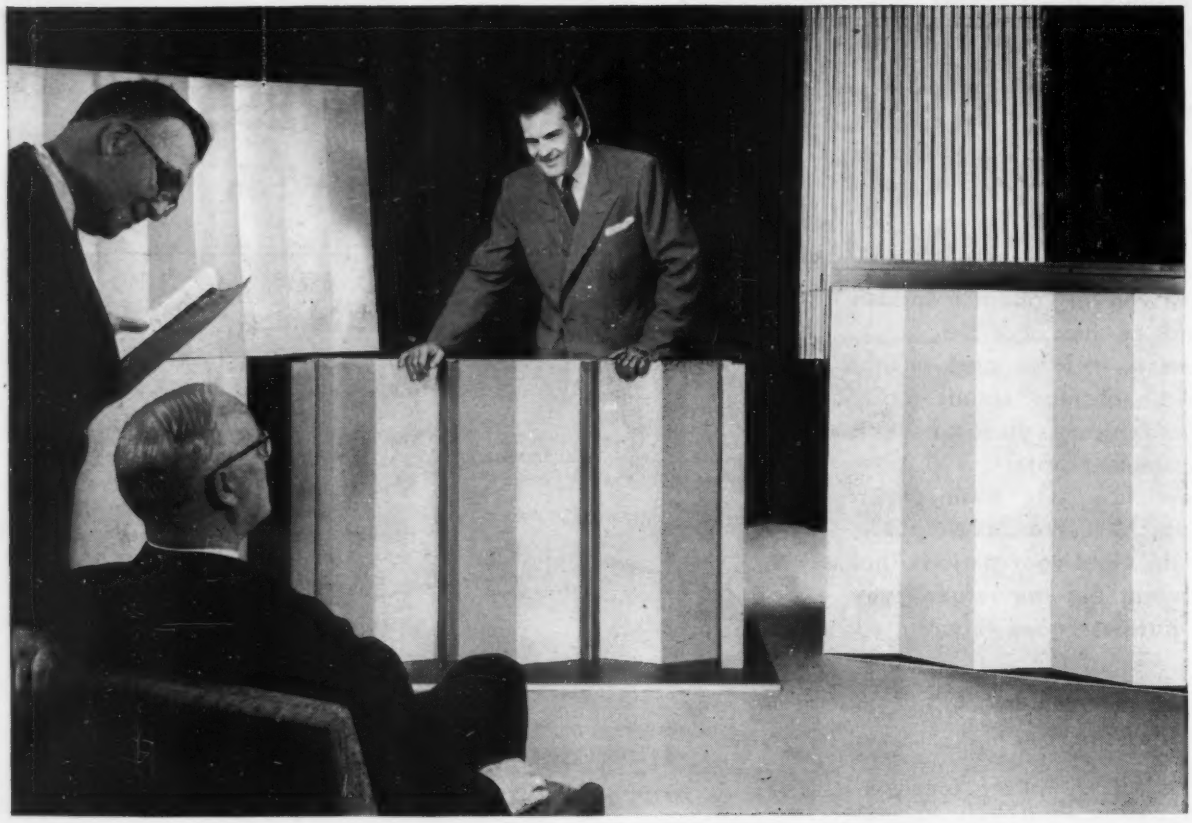
$1,000,000 loss, and the Government refunds the $145,000 paid in taxes for 1954 and 1955 . . . . . .

IN 1957 a profit of

$150,000 is made again. But the company can offset all this profit against part of the 1956 loss and pay no tax . . . . . .

Then each year through 1961 this tax offset can go on until all of the million-dollar loss is deducted from untaxed profits

© 1954, By U. S. News Pub. Corp.



HERE'S HOW ARCHITECTS HELP BUSINESS LEADERS

design the most efficient buildings of today

● First, the men, whose vision is expanding America's industry and commerce, approve their architect's recommendation for curtain walls of ENDURO Stainless. These embody the construction advantages of today's technology.

Then Republic Steel's research and development engineers, using the architect's sketches, work out the fabricating details of his design.

The exact shape of the stainless steel panel is presented in a sample for approval.

The lightweight, efficient, speedily erected curtain wall is probably the most distinctive building feature of this century. And stainless has proved to be the most enduringly beautiful and corrosion-free metal for curtain walls. The most recent of today's beautifully designed commercial buildings, that will have spandrels of ENDURO, is the Westinghouse Research Laboratory at Pittsburgh.

Republic's well-equipped, fast set-up for working with architects and builders on the design of ENDURO Stainless wall panels is typical of

REPUBLIC'S 3-STEP SERVICE TO STEEL USERS:

1 **Making the finest steels possible, in the world's widest range;**

2 **Recommending to you the most exact specification to suit your needs (because we have this wide range);**

3 **Following up with metallurgical field service to insure your greatest benefit from the use of Republic steels.**

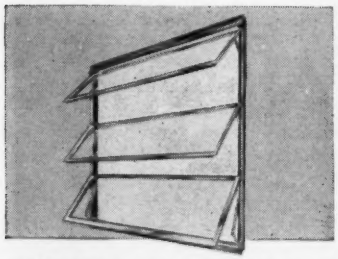
REPUBLIC STEEL

GENERAL OFFICES • CLEVELAND 1, OHIO

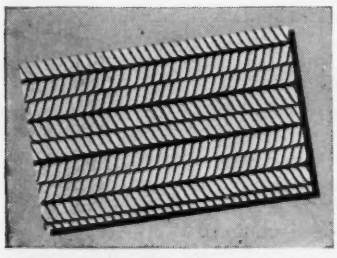
The REPUBLIC name is now borne by thousands of steels and steel products.

Do you know these?

DOORS for interior use, of flame-resisting, non-warping steel, are one of the most flourishing items sold by Republic's Truscon Steel Division – a natural companion to Truscon's metal windows.



WINDOWS of steel are products of Republic's Truscon Division. Just about any kind of metal window you can name, Republic has. Truscon is the world's largest supplier of metal windows and doors.



METAL LATH, gutters, downspout, flashing, all kinds of fasteners such as nails, staples, and bolts are part of Republic Steel's tremendous part in the tremendous building industry – now enjoying the most *tremendous* boom in the history of this booming nation.

REPUBLIC STEEL

WORLD'S WIDEST RANGE OF STANDARD STEELS AND STEEL PRODUCTS

offset future earnings, resulting in lower taxes. Also, if there are no past profits, all losses can be applied to offset future earnings.

The effect, in brief, is to permit business to save taxes by spreading any losses over a span of years. The present tax law is the most liberal that business has ever had. Losses can be carried back for two years and carried forward for five years. That allows an eight-year period for absorbing losses into profits.

Permission to carry back losses for two years is likely to be of particular benefit in the event of a recession, since large profits earned at the top of a boom can be used to absorb losses in a period of business decline. This tax benefit was not allowed in the previous recessions of 1921, 1932, and 1938.

Even in a time of mild setback, as in the current year, the carry-back will soften the impact of losses. This year, for example, rather substantial losses may be reported by some automobile companies, textile firms and others that have been hit by the drop in business volume. Many of these firms will be able to offset current losses against the profits chalked up in 1952 and 1953 and obtain tax refunds.

The Government, in other words, is willing to share in these losses by returning taxes collected in years of profit.

Tax payments, in fact, instead of becoming an unalloyed burden on business operations might even act as a cushion against future reverses. There is an assurance—as the example given in the chart on page 53 shows—of recapturing some past profits, in the form of tax refunds, during years of loss. And there is the further assurance that losses of one year can be spread over future years to result in tax savings. This makes the prospect of losses far less frightening than it used to be to business managements.

In the usual ups and downs of business earnings, the new tax system makes sure that taxes will not take more than their proportionate share of earnings, averaged over a period of eight years. This is likely to become a strong incentive for business expansion and new business ventures.

This has not been true in the past. The tax system that was in effect during most of the 1930s failed to give any recognition to losses, except in the years when they occurred. If a businessman made money in one year, he was taxed on his profits. If he lost money the next year, he stood the loss by himself. There was no chance to balance losses against profits and thus save taxes. The Government took a sizable slice of earnings, but disregarded losses. This was a system

(Continued on page 56)

WHAT SIZE BOURBON FITS YOUR TASTE?

by
J. P. Van Winkle
President
Stitzel-Weller Distillery
Louisville, Kentucky
Established 1849

What's the sense of buying shoes that cramp your toes, collars that pinch your neck, or bourbon too small for your taste?

Whiskey comes in sizes too, and the sole concern of our family-owned distillery through more than a century has been to provide a flavor ample enough to *fit* the man who knows how *real* Kentucky bourbon *ought* to taste.

How do we do this? Largely by controlling our proof through each stage of operation.

Proof is that figure on your label that tells the "alcoholic size" of the whiskey. But how and why it gets that way is the important thing with us.

We distill at low proof to preserve the natural bourbon flavors. OLD FITZGERALD comes from the still at 85 proof and is further refined in our old fashioned pot still doubler to 117 proof.

To provide maximum contact with the oak, we reduce this proof before barreling to 103 by adding pure distilled water.

As our barrels become "bottle ripe" we find that the whiskey has gradually increased in proof during the aging period. Don't ask me why.

Before bottling we again add distilled water to adjust the proof to exactly 100, no more no less.

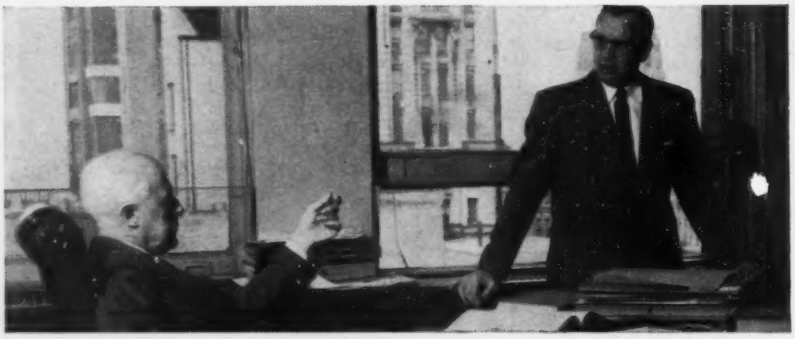
This is the historical proof at which bourbon has *always* been bottled-in-bond, as dictated and supervised by the Federal Government and defined by the U. S. Pharmacopoeia.

It is only at this proof that OLD FITZGERALD is offered as a worthy adjunct to your business entertaining.

We invite you to join the inner circle of executives who have discovered this unique flavor for themselves, and find it good business to share, in moderation, with associates and friends.

Bonded 100 Proof Original Sour Mash Kentucky Straight Bourbon

"Our cost figures look better since we started using Erie's on-time delivery of our materials. By meeting our needs for scheduled deliveries at regular times, the Erie has become part of our production line."



"Keeping cost down is important to us. Now that we can depend on getting supplies moved in as scheduled, we've been able to cut out one step in our operations—thanks to the cooperation of the Erie."

Dependable service and a record of promises kept are but two of the many reasons shippers depend on the Erie Railroad. For an "on-time" transportation job, route your next shipment Erie! There's an Erie man in your area.

that tended to make businessmen cautious, wary of any risks.

The new law also applies tax burdens more evenly between businesses that usually have only mild variations in earnings from year to year and industries that often report wide swings between profits and losses. Business experiences in the years 1930 through 1938 give examples of the inequalities.

The food-processing industry in this period fared better than most manufacturing groups. This industry reported a deficit in only one year—1932. Taxes were rather evenly distributed year after year. But the textile industry had a different experience. For the 1930-38 period, textile firms as a group had a net deficit. Yet in profitable years these firms were taxed. The result was that the textile industry was hard hit by lack of funds for investment.

This inequality no longer will prevail. By being allowed to balance losses against profits, firms with large fluctuations in earnings can average their profits, for tax purposes, on a par with the more steady earners. They will not have to pay heavy taxes in their profitable years and be forced to bear their losses in poor years without tax relief.

New ventures also are likely to get more encouragement from the present tax law. New enterprises often do not count on making money in the early years of operation. Frequently they are started with the prospect that earnings may not show up for several years. In the past, this meant that plans must be made with the idea that earnings would be taxed when received. Now, the losses of early years can be applied against the expected profits of later years with a guarantee that taxes will be equalized.

Many new ventures, in fact, probably can count on several years of tax-free earnings after they have established profitable operations.

Permission to balance loss years against profit years was allowed in 1918 for a short period. Then, in 1921, losses were allowed to be carried forward for two years. This was reduced after 1929 to one year of carry-forward. From 1933 through 1939, business was not allowed to take any loss deductions.

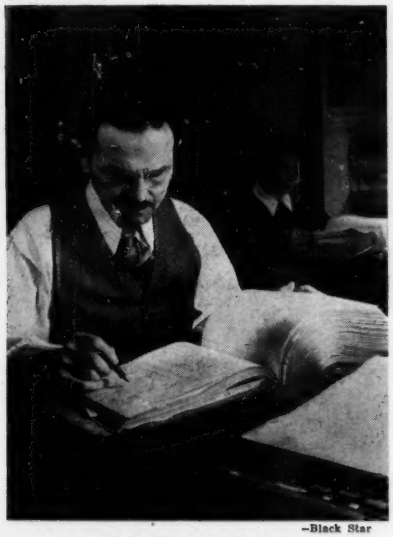
Since 1939, Congress has been broadening the privilege of applying losses in one year against profits of another year, thereby reducing the total tax burden. A policy of two years of carry-forward was reinstalled in 1939. The carry-back was initiated in 1942, when businesses were allowed to carry back losses for one year. That was extended to two years in 1943. Then in 1948 the carry-forward was extended to three years.

In 1950, a carry-forward of five years was allowed, but the carry-back was re-

duced to one year. Now the carry-back of two years comes in again. Business now has eight years in which profits may be used to absorb possible losses.

The theory behind this system is that the hand of the tax collector will rest more lightly on business firms from now on. The Government, under present law, takes up to 52 per cent of a company's profits. In other words, the Government gets more from profits than the private firm. But, without offsets, the Government bears no portion of any losses. In allowing offsets, the Government actually shares more equally in the fortunes of a business enterprise.

Had this system prevailed in the 1920s and 1930s, business firms would have had their financial reverses softened by tax cuts and tax refunds in years of recession. The setback in 1921, for instance, probably would have been eased if losses in that year could have been carried back to the profitable years of 1919 and 1920, even though carry-forwards then were allowed.



—Black Star

WHEN RED INK APPEARS . . .
. . . Internal Revenue to the rescue

The severe financial distress of the 1930s—when losses exceeded profits in 1931, 1932 and 1933 for corporations as a group—probably would have been reduced, if these loss years could have been balanced against profitable years. Lower taxes at least would have given companies more money to support themselves.

The present tax law is expected in particular to provide automatic relief in the event of a future setback to business. Most companies reported profits in 1952 and 1953. Many are reporting profits now. Taxes paid on these profits can be returned to businesses that may run into losses in years ahead.

Quality, Economy, Delivery

Quality aircraft products...at economical costs... delivered when and where you want them, result from a Kawneer policy successfully demonstrated many times since we first developed streamlined steel tubing during World War I. Now, in a new plant with new machinery and equipment devoted exclusively to production of airframe assemblies and detail parts we can implement our policy even more efficiently.

We invite inspection at your convenience. But if you cannot visit us, we'll be glad to send you our illustrated booklet or have a representative call on you.

Kawneer
NILES, MICHIGAN
Berkeley, Calif. · Lexington Ky. · Toronto, Can.
AIRCRAFT PRODUCTS DIVISION

SINCE 1907, FABRICATORS OF METAL AIRCRAFT ASSEMBLIES AND ARCHITECTURAL PRODUCTS.

INSIDE STORY OF—

THE HYDROGEN BOMB

What held up the H-bomb? Who stalled this nation for four years while German scientists captured by the Communists worked feverishly in Soviet laboratories? And how close a call did the U. S. have?

A forthcoming book, written by James R. Shepley and Clay Blair, Jr., contains some pertinent answers. The authors, who had access to official sources, spent months of research on the problem. Many of the officials concerned have read advance copies of the book and furnished corroborative data to the authors.

As seen by the writers of the book, most of the nation's H-bomb troubles can be traced back to one man—Dr. J. Robert Oppenheimer.

The authors say that Dr. Oppenheimer, almost singlehandedly, stopped the H-bomb program in its tracks.

Meanwhile, according to Mr. Shepley and Mr. Blair, Russia's scientists worked at full steam, had a droppable H-bomb six months before the U. S. did, and very nearly captured the lead for good.

Among the heroes of this story are: Dr. Edward Teller, the scientist who knew that the bomb could be built, but who had no "influence"; Lewis L. Strauss, for a time the lone H-bomb enthusiast on the Atomic Energy Commission; the late Senator Brien McMahon, and the executive director of the Joint Committee on Atomic Energy, William L. Borden. It was Mr. Borden who in 1953 wrote the letter to J. Edgar Hoover which started the security proceedings against Dr. Oppenheimer.

The struggle to get the H-bomb program off the ground is described in detail here for the first time.

Mr. Shepley began his newspaper career with the United Press. He was a war correspondent in Asia and was commissioned a captain in the Army in 1944. He served for two years as an aide to General George C. Marshall, accompanying him on his mission to China. Mr. Shepley is now head of the Washington Bureau of *Time* magazine.

Mr. Blair served in the Navy during the war, and is also with *Time* in Washington.

HOW THE U.S. ALMOST LOST IT

By James R. Shepley and Clay Blair, Jr.

Photo: Civil Defense Administration

(Although the complete book, "The Hydrogen Bomb," will not be published until Sept. 30, 1954, by the David McKay Company, Inc., New York, *U. S. News & World Report* has obtained first serial rights throughout the world to print excerpts of it in advance of regular publication.

(The entire contents of this magazine are protected by copyright. No part of the material from the book "The Hydrogen Bomb" in excess of 1,500 words may be reprinted or used in radio or television broadcasts without written permission of the copyright owners. The copyright on the first serial rights is held by United States News Publishing Corporation, and the copyright on the book is held by James R. Shepley and Clay Blair, Jr.

(Any permission to reprint in excess of 1,500 words prior to Sept. 30, 1954, must be obtained from United States News Publishing Corporation. Quotations of less than 1,500 words are released for morning newspapers of Sept. 21, 1954—*Editor's note.*)

Excerpts from the book follow:

"Joe One"

IN LATE AUGUST, 1949, a United States Air Force B-29 bomber rolled down the runway of a Far Eastern base, then climbed gently up into the summer sky. Several minutes later, the big silvery plane leveled off, the pilot switched on automatic controls, and the crew settled back for a monotonous and presumably routine flight.

The plane and its crew were on a special mission for the Air Force, one that was more concerned with the peaceful than the warlike pursuits of man. Part of a large-scale research program, the B-29's mission was to fly a predetermined course and, through the use of special photographic plates that were mounted throughout the plane, measure the penetration of cosmic rays through the earth's atmosphere. Later the information on the plates would be studied in U. S. laboratories by scientists seeking clues to the nature of the universe.

The B-29 was only one of scores of aircraft assigned to the project. Its flight, with the cumbersome photo plates, was by no means the first. As it droned over its prescribed and scientifically plotted course, its plates sopped up the cosmic rays. Finally, to the relief of the bored crew, the mission was over. The B-29 returned to base and landed. The photographic plates were removed. The crew repaired to its quarters.

The plates were taken to a scientific laboratory for developing and packaging. In the darkroom, the airman who developed the plates was bug-eyed; instead of the usual streaks of light made by the cosmic rays, the plates were saturated. Apparently the B-29 had flown through an intensely "hot" area. Could so much cosmic radiation be possible?

The laboratory's top scientists hastily were summoned. They examined the plates carefully. Quickly they ruled that such a quantity of cosmic-ray penetration was unthinkable. Something else had caused the saturation of the plates. One scientist remarked that such saturation reminded him of the residue from a mushroom cloud, the grim umbrella of an atomic bomb. But, the scientists well knew, the U. S. had not exploded an atomic bomb during 1949.

Then, slowly, the ominous thought took form: Had some other nation—the Soviet Union perhaps—shot an atomic bomb? It seemed inconceivable since the U. S. then enjoyed an atomic monopoly that its scientists and military intelligence alike were confident would continue for at least three more years, and more likely ten. Yet it was a possibility that had to be explored. Quickly, the scientists contacted the United States Air Force headquarters, which had only the year before established an atomic-bomb detection unit, with special planes to go aloft and scoop dust particles from the air. The Air Force moved the unit into emergency action. In hours, other B-29's were retracing the steps of the cosmic-ray search plane in an effort to capture air-borne particles for positive identification.

Later the B-29's returned to base. Their scoops had obtained the samples. After a preliminary review in the field, the samples were rushed to two Atomic Energy Commission laboratories in the United States.

Several days passed before the dust samples could be thoroughly analyzed and the report hurried to Washington. The analysis confirmed the fears of the scientists: A Soviet atomic explosion had taken place. Moreover, the analysis suggested that the Soviets had detonated a plutonium device far advanced technically over the first U. S. explosion at Alamogordo. AEC scientists estimated that "Joe One," as the Soviet explosion was quickly labeled, had exceeded the force of the Hiroshima bomb by a factor of six. The Soviets, it appeared, had skipped over the trials and errors of the early U. S. developmental period.

For the West it was one of the major turning points of history, and like most such events it went unnoticed by mankind in general. In the U. S., the Dodgers and the Cardinals were in a cliff-hanging race for the National League pennant. The Vice-President, somewhat advanced in years and highly regarded, was in what appeared to be an equally close race for the hand of an attractive St. Louis widow named Mrs. Hadley. The biggest news story of the summer, the revolt of the admirals against the B-36 and the doctrine of strategic bombardment, had just about run its course.

If the fiercely radioactive dust cloud, which appeared as a stranger orbiting in the upper air, caught the U. S. public dreaming happily of romance, it caught Washington and the U. S. Government little more alert. The U. S. had only recently set up the detection net that confirmed its existence. Even this had been done only after long delay and disbelief within the Atomic Energy Commission that such measures were necessary.

. . . Neither the U. S. in general nor Washington in particular had yet come to accept the Soviets for what they were in terms of scientific knowledge and intellectual resources—the full equals of the U. S.

This dangerously naïve intellectual-superiority complex was particularly strong in the scientific community and consequently in the Atomic Energy Commission, the civilian agency established by Congress after Hiroshima to keep tight control on all atomic affairs in the United States, peaceful and military. The AEC had been fashioned out of the Adam's rib of the Manhattan District of the Army Engineers, which produced the wartime A-bombs.

All of the Manhattan District facilities, such as the Weapons Laboratory near Santa Fe, New Mexico, known as Los Alamos, the Isotope Separation Plants at Oak Ridge, Tennessee, and the plutonium-producing piles at Hanford, Washington, had become the property of the AEC. The AEC was responsible for procuring the ores of the fissionable heavy metals, uranium and thorium, for converting them into usable concentrations of pure metal, for manufacturing weapons, as well as radioactive isotopes, useful in medicine and industry, and electric power reactors for ship propulsion and generators for electricity. The AEC was also charged with responsibility for keeping the United States ahead of the world in atomic development. To do so, it had to pursue its own research as well as attempt to keep abreast of progress throughout the world, particularly in the Soviet Union.

In September, 1949, the AEC was headed by Chairman David Eli Lilienthal, whose name was synonymous in the minds of Republican Senators in Washington, with Franklin Roosevelt's New Deal and big government. Lilienthal had been born in the little town of Morton, Illinois, the son of Jewish immigrants from a village near the old Austro-Hungarian city of Pressburg. He had studied at DePauw University and Harvard and had got his first job with a Chicago law firm headed by Donald Richberg, then counsel for the railway brotherhoods, later for the Standard Oil Company.

In 1933, when Lilienthal was only thirty-three, F.D.R. had chosen him for the Tennessee Valley Authority, of which, after a long battle with its first chairman, Arthur Morgan, he became head in 1938.

By the time of "Joe One," Lilienthal was covered with the political scar tissue that marks the long-time veteran of Washington power struggles. When he was appointed by President Harry Truman to head the new Atomic Energy Commission, an old foe, Tennessee's late patronage-hungry Senator Kenneth McKellar, had attempted to block his confirmation. The subsequent hearings developed into one of the twentieth century's first great Senatorial "brain-washings." Later, the Joint Congressional Atomic Energy Committee launched a Senatorial investigation into the "incredible mismanagement" of the AEC. Wounded and weary, Lilienthal nevertheless clung to his New Deal faith and generally regarded atomic weapons with a sense of revulsion. Lilienthal conceived his role in the AEC chairmanship, understandably under the circumstances, as a dedication to the advancement of the benign uses of atomic energy.

There were four other members of the AEC, three of whom customarily stood with Lilienthal in issues that came before the Commission. They were Sumner T. Pike, a down-Easter, born in Lubec, Maine, who had been a New York business executive in the twenties and thirties and had come to Washington to begin a government career as an adviser to Harry Hopkins, then Secretary of Commerce. The scientific member of the Commission, just appointed the previous May, was the onetime head of Princeton's Physics Department, Henry DeWolf Smyth. Smyth was the Manhattan District scientist who had authored the first official War Department publication on the atomic bomb, entitled "Atomic Energy for Military Purposes" but far better known as the "Smyth Report."

Another newly appointed member of the Commission was a relatively obscure government lawyer named Gordon Dean. Dean had been a law partner of the man who at the time of "Joe One" headed the powerful Joint Congressional Committee on Atomic Energy, Connecticut's freshman Democratic Senator Brien McMahon, and owed his appointment to this association. Dean had been a Justice Department lawyer under Attorneys General Homer Cummings and Robert H. Jackson. He had once acted as Public Relations Director for the Justice Department and had more than the average lawyer's knowledge of how to handle two of the most touchy groups in Washington—the Congress and the Press.

The final member of the five-man AEC was its great dissenter, Lewis Lichtenstein Strauss (pronounced "Straws"), a New York banker, who, as a Naval Reserve officer, had reached the rank of rear admiral during World War II. Strauss was the Republican member of the AEC, had been appointed to the Commission, upon its creation, by Harry Truman. He had made his mark on Harry Truman and Democratic Washington by his wartime service in the Navy, not because of his political acceptability or lack of it.

A quiet, courtly Virginian of deep religious faith, Lewis Strauss was often mistakenly thought to have been born with, in his mouth, the silver spoon of one of the wealthy New York City families of similar name. He came from much humbler beginnings. His father was a Richmond, Virginia, shoe wholesaler when Lewis Strauss was graduated from John Marshall High School and took a job as a drummer on the road. By day he displayed his fourteen trays of shoes. By night he read the Latin classics, studied law and physics.

One winter's day in 1917, Strauss boarded the Richmond, Fredericksburg and Potomac Railroad for Washington to seek out Herbert Hoover, who had established the headquarters of his Belgian Relief Commission in the Willard Hotel. He walked in unknown and unintroduced and was almost sent on his way by Hoover's secretary when the great engineer himself appeared on the scene.

"When can you go to work?" Hoover asked.

"Right away," Strauss replied.

"Take off your coat," Hoover ordered.

By 1919 Hoover was Director General of the Allied Supreme Council, and Lewis Strauss was his personal secretary. The job took the Richmond shoe drummer into the environment of grand diplomacy and European intrigue. In it he struck up a lifetime friendship with a young lawyer who worked for Hoover, named Robert Alphonso Taft, and caught the eye of a friend of Hoover's named Mortimer Schiff, millionaire member of the Wall Street investment firm of Kuhn Loeb and Co. After World War I, Strauss went to work for Kuhn Loeb, where he piloted the financing of such huge industrial projects as Inland Steel and U. S. Rubber and such inventions as Kodachrome film and Polaroid glass. He married Alice Hanauer, daughter of a Kuhn Loeb partner, and wound up occupying the office of the late Otto Kahn, long-time head of the firm and famed Wall Street financier.

At the outbreak of World War II, Strauss headed back to Washington as a Reserve lieutenant commander. He landed a berth in the Navy's Bureau of Ordnance, but his business experience and his abilities were far above his rank and billet. Fellow Wall Streeter James Forrestal, as Secretary of the Navy, soon installed Strauss as his special assistant. Strauss annoyed regular Navy brass by his quiet wit and his lighthearted breaches of Navy procedures, but he came out of the war a rear admiral with a Distinguished Service Medal and Legion of Merit and was made the Navy's representative on the important new "Interdepartmental Committee on Atomic Energy." This became Strauss's direct route to the AEC.

His Wall Street background and archly conservative naval associations kept his eyes dry about Soviet Communism from the start. Like his good friend, Jim Forrestal, he was one of the first to sound the alarm in official Washington circles that Stalin was no simple warmhearted father of his people. Strauss's conservatism and his suspicions of Soviet intentions put him almost constantly in dissent from his fellow members of the AEC. It was Strauss alone in the AEC who long demanded and finally saw established a detection net for the discovery of just such an event as "Joe One."

The Atomic Energy Commission had the immediate responsibility for keeping the U. S. ahead in atomic armaments at the time the news of "Joe One" broke over Washington, but parallel responsibility for our military security lay with the newly created Department of Defense at the Pentagon. The Pentagon was generally at odds with the AEC, since the military historically tends to lean to conservatism and look with suspicion toward nations that demonstrate the capability, let alone the intent, to bring armed action against our nation or its allies. Against the will of the AEC, the Pentagon forced a foot into the door of the AEC through an atomic liaison committee. The military was for the most part uneasy about the development of weapons under what it regarded as the soft, unrealistic management of the AEC and would have preferred to control weapons development, and the weapons, in the armed forces. It was precluded by law from the former and from the latter by Harry Truman's order giving custody of atomic weapons to the AEC. . . .

Truman had appointed his campaign money raiser, Louis Johnson, to be Secretary of National Defense, succeeding Forrestal, with instructions to cut military expenditures. Johnson was a shrewd, ambitious, soft-spoken lawyer from West Virginia who had got a taste of the pleasures of public life as an Assistant Secretary of War under F.D.R. and as Mr. Roosevelt's personal envoy to India during the war. One of the American Legion's most successful kingmakers, Johnson had long cherished the ambition to head the nation's military forces. He had guessed right in 1948 and had stood firmly with the extremely thin ranks of Democrats who thought Harry Truman had a chance and were willing to help him. His appointment as Secretary of National Defense fulfilled an aspiration of very long standing and Louis Johnson had no intention of jeopardizing his position. When Truman ordered, "Cut," he set out to cut "fat not muscle" as he put it, but cut. "Joe One" found Louis Johnson with his knife honed to a razoredge and poised in mid-air.

What About the Super?

THE SECRET of the strange cloud that had appeared in the upper air was rushed through enciphered military communications to the Washington headquarters of Chairman William Webster of the Defense Department's atomic liaison committee. Webster's hands trembled as he read the message marked "Top Secret." He asked the British if their own detection net confirmed the news. It did. Then he hurried the word to his superior, Secretary of Defense Johnson, who received it with unconcealed skepticism.

"How can we be certain that the explosion was a Russian bomb?" Johnson demanded. "It could have been a laboratory accident." Had not the scientists left open a 5 per cent area of doubt, Johnson asked?*

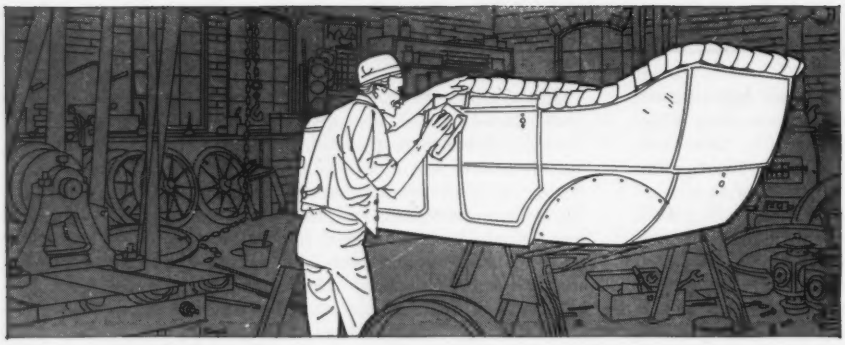
*The original analysis was not complete. It stated that there was a slight chance, 1 in 20, that the explosion was not a bomb. By September 23, U. S. scientists positively confirmed that "Joe One" was a bomb. British scientists independently reached the same conclusion.

It seemed incredible to Louis Johnson that the Soviet Union—the "backward boy" of science and technology—could have mastered the secret of the atom, built the enormous industrial facilities needed to produce fissionable material, and fashioned an atomic weapon in so short a time.

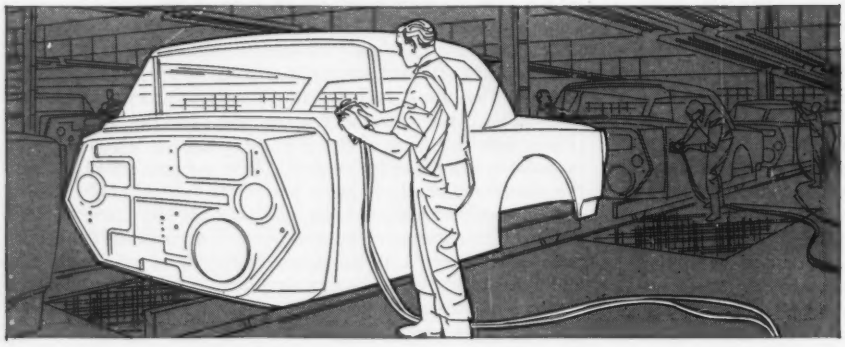
Only four years had elapsed since the U. S. had detonated its own, first, prized atomic bomb at Alamogordo. Major General Leslie R. Groves, who supervised the wartime Manhattan District and who in 1945 probably knew more about the enormous problems of producing an atomic bomb than any man, had advised the U. S. Government that the Soviets would need fifteen or twenty years to build an atomic bomb.

General Groves's reassuring prediction, which formed the basis of postwar U. S. foreign and military policy, had been bolstered by the opinon of prominent scientists, including Dr. Vannevar Bush, who directed the important Office of Scientific Research and Development during World War II. . . .

(Continued on page 63)



Finer finishes, faster



Elbow-grease was a prime ingredient in the shop . . . before automobile refinishing became mechanized. Production lines couldn't wait, however. Machines provided the answer. Sanding machines now do the job better, faster, and with less human effort. Their contribution has helped make production lines roll faster and faster . . . and indirectly helped to bring automobile prices into a range where almost every U. S. family can afford to own at least one. Sundstrand has long been a supplier of sanders. Almost every leading automobile manufacturer now uses them on his production lines. Recent development of a new orbital-type is expected to make even greater contributions to the automobile refinishing field. This is just one of many industries served by Sundstrand's "Engineered Production" Service* . . . equipment and technical know-how that help bring costs *down*, production *up*. Perhaps Sundstrand is a name to remember in *your* business, too.

Sundstrand orbital-type Sander with built-in water attachment for wet sanding. Fits palm of hand, removes material faster, minimizes vibration.

A name to remember in your business!

SUNDSTRAND

8 Sundstrand divisions make widely diversified products

MACHINE TOOL DIVISION—Lathes, Milling Machines, Special Machinery, Centering Machines, Bench Centers, Balancing Tools.

BROACHING DIVISION—Standard and Special Broaching Machines, Tools, Work-holding Fixtures.

AVIATION DIVISION—Constant Speed Hydraulic Drives, "Rota-Roll" Pumps.

FUEL UNIT DIVISION—Pumps used by the nation's leading oil burner manufacturers.

INDUSTRIAL DIVISION—Hydraulic Transmissions, Pumps, Control Valves, Fluid Motors.

PNEUMATIC DIVISION—Air Sanders for Automotive, Woodworking, Metalworking and Plastics Industries.

FOUNDRY DIVISION—Gray Iron Castings for Sundstrand and other manufacturers.

MAGNETIC PRODUCTS DIVISION—Tool Room and Production Chucks, Magnetic Fixtures, Lifting Magnets, Chip and Coolant Separators.

Sundstrand engineers have worked with leaders in American industry, in many fields, for close to half a century. Benefit by Sundstrand's *reliable* research, *expert* engineering, *precision* production. Write for story:

*"Engineered Production" Service**

SUNDSTRAND
MACHINE TOOL CO.
ROCKFORD, ILLINOIS

American Broach & Machine Company
Ann Arbor, Michigan

*Reg. U. S. Pat. Off.

The wrong guesses of Bush and Groves, made with the full knowledge that the Soviets employed perfectly capable physicists such as Peter Kapitza, Fersman, Frenkel, Joffe, and others, had been substantiated within official governmental circles by equally wrong guesses of the military intelligence agencies. The Navy figured 1965. The Army guessed 1960. The Air Force, in what was considered a biased and "alarmist" estimate had put the date at 1952.

There was another even more compelling reason for Johnson's skepticism of the evidence picked up by the detection net: It placed him and his entire policy as Secretary of Defense squarely in error. Confident of a strong, safe, U. S. monopoly in atomic weapons for many years to come, Johnson, shortly after taking office, had aimed his economy drive at cutting costly U. S. standing military forces to peacetime garrisons. In his eagerness to trim "fat from muscle" Johnson had forced drastic new reductions in U. S. armed forces levels, already decimated by the helter-skelter liquidation of U. S. power after V-J Day.

The Marine Corps had been reduced to a police force. More cuts were in store. The Navy's pride, the expensive supercarrier *United States*, had been canceled. The Air Force, charged with the nation's number-one power role, strategic atomic retaliation, had been chopped to forty-eight wings in the face of professional and even Congressional demands for seventy.

Exuding confidence, Johnson had cut the total U.S. defense budget to thirteen billion dollars, declaring that if the Russians struck at four, he would strike back at five. Now the shadow of "Joe One" fell across Johnson's hatchet. . . .

Economizer Johnson, like many a defeated military commander, chose to disbelieve the intelligence.

Thus, when word of "Joe One" finally reached the White House, later in the same September afternoon, it was carefully hedged and couched in qualifications invented by the Department of Defense.

Harry Truman heard the secret in the Presidential study—an oval, light-filled office that overlooks the White House Rose Garden.

He listened to the dramatic news in silence. At the conclusion of the briefing, he sighed deeply and, unlike his Secretary of Defense, accepted the full meaning of the news. Harry Truman saw immediately that a momentous event had overtaken his nation.

"That means we have no time left," he said solemnly, to no one in particular.

Harry Truman was not distinguished for his eloquence. If he had been, he could not have characterized the situation into which the United States had slipped in September, 1949, more aptly. Truman understood that time was running against the U. S., but he was unable at the moment to define a course of action for turning the trend the other way. . . .

The news of "Joe One" was taken from Truman's oval study to the National Security Council, heart of the U. S. Government's high-level, policy-making machinery. The next day a meeting was held in a high-ceilinged room in the old War-Navy-State Building across West Executive Avenue from the White House. Ten men were present, the President, Secretaries of State, Defense, the Director of the Central Intelligence Agency, and other top advisers. . . .

In the first NSC meeting following the news of "Joe One," Soviet behavior since World War II was re-examined. Notice was taken of futile U. S. attempts to "coexist" with the Soviet, including efforts through the United Nations toward international control of atomic energy and general demobilization. Then followed recital of the evidence of "Joe One." The explosion meant that in all probability Russia, in only four years, had constructed a complex industrial system capable of producing fissionable material. The alternatives were (1) that the explosion was a laboratory accident, as Johnson believed, or (2) that the Soviets had actually stolen enough U. S.-made fissionable material successfully to explode a bomb, a conclusion unsupportable by the facts.

No one spoke for a moment but the thought was in every mind. The President spoke first: "Where do we go from here?"

Secretary of State Dean Acheson made the first concrete proposal. He declared that the Defense Department's economy program was unrealistic and must be reversed. Acheson said the U. S. must rearm speedily and forget such aims as balancing the national budget. We must influence our allies to do the same, Acheson said. Echoing Truman's warning of the day before, he added: "This is a great crisis. We have no time to lose."

In the end, no one disagreed. Even Louis Johnson, after a little persuading, admitted that Acheson's argument had logic, that in the light of the evidence it would be suicide for the U. S. to continue to *assume that the Soviets did not have the bomb.** The U. S. henceforth must proceed with its national planning based on the assumption that the Soviets had an increasing stockpile of atomic weapons.

Later, in a famous paper numbered NSC 68, the Security Council laid down the U. S. strategic reply to the Soviet explosion and increasing U. S.-Russian tension. The decision was made to put the U. S. in "situations of strength" throughout the world to meet the growing threat of Soviet encroachment. However, Johnson's economy plan had cut deeply: Not until Korea—eight months later—was the U. S. impelled into sufficient mobilization to move toward a "situation of strength."

In its September meetings, the National Security Council was unanimous in its view of the significance of the Soviet explosion but could not agree on what to do with the Russian secret. Should it be hidden from the world? Or should the American people be told? What if the Soviets broke the news first, in an effort to use it as a weapon of fear to paralyze the will of Europe and the free world? . . .

The questions were resolved in a few days, when the U. S. learned that Soviet Representative on the U.N. Security Council, Andrei Gromyko, had scheduled a major speech. Fearing Gromyko would break the news, Truman decided to take the initiative—make the announcement casually and minimize alarm. . . .

There was no panic. The American people largely took the news in stride. In Congress, there was little discussion. Most statements were designed to reassure and took the line that the U. S. had expected this all along. In Europe there was a definite increase in neutralism, but certainly no widespread flight to the bomb shelters. Many Britons, visualizing them-

*Johnson was never really convinced that the Soviets actually had an atomic bomb. Truman himself later backslid toward the same view. In January, 1953, long after several atomic explosions in Russia had been definitely established, ex-President Truman in Missouri expressed doubt that the Soviets possessed the bomb. From his West Virginia home, the ex-Secretary of Defense sided with the ex-President, and at that late date, remained skeptical. Truman's extraordinary persistence on this point finally promptly the chairman and the two ranking members of the Joint Congressional Committee on Atomic Energy to issue on January 27, 1953, what they hoped would be a final definitive statement that the Soviet explosion had been a bomb. "Probably never in history," they concluded, "has such clear-cut evidence been examined so exhaustively so often to arrive at the same simple and unavoidable conclusion."

selves caught in between two atomic giants who might nervously begin throwing A-bombs at any moment, pressed anew for outlawing this weapon.

The one reaction that altered history and truly set the stage to keep free men abreast of their fate did not occur in public. It came a few days after the President's announcement. Lewis Strauss, the quiet, conservative, Republican member of the Atomic Energy Commission who had consistently been in the forefront of the fight for bigger and better weapons, sat down at his desk to write a brief memorandum.

In his deep concern at the news of "Joe One" he had searched his mind for an answer. Long since forgotten and almost lost in the files of the AEC was a proposal made far back in 1945 to build a super atomic weapon, a bomb that might be a thousand times bigger than "Joe One."

Strauss had called for the dusty file and reread it with a new curiosity. If such a bomb could be built, Strauss decided, the news of the Soviet explosion made it imperative that the U. S. do so. Since the key to the superbomb was an atomic bomb of the kind the Soviets had exploded, it was necessary to assume that the Soviets themselves might already be started on this next horrendous step.

Strauss's memo made these points:

1) When the Soviets exploded the atomic bomb, the U. S. forever lost its monopoly in the atomic weapons field.

2) At the moment that the Soviet had as many atomic bombs as it needed, the Kremlin would strike. It mattered not whether the U. S. had 1,000 or 100,000 more bombs than the enemy.

3) The U. S. must find a way to hold back a third world war until the Soviet hunger for conquest was weakened by internal strife.

4) Our only hope was to create a new and greater deterrent to Soviet aggression, a weapon many times more powerful than the A-bomb. Hence, the AEC must turn its vast energies immediately to the manufacture of a hydrogen bomb.

In the words of the physicists, Strauss wrote, the U. S. must make a "quantum jump" in its atomic planning. In closing, Strauss requested that the General Advisory Committee be called to consider how best to proceed with the H-bomb program.

The memo was addressed to his AEC colleagues. Chairman Lilienthal was not impressed. Lilienthal's view of the significance of "Joe One" was expressed in a speech that he made several days later:

> The news means that we should intensify our efforts in developing the peaceful and benign applications of our new knowledge. . . .
>
> Most important, the news from Russia means that we should seek to develop to the utmost our greatest weapon of all, that working faith in the spirit of men that we call democracy. . . .

Lilienthal opposed the superbomb then. It was a view from which he never departed while head of the AEC. At the time he received Strauss's memo, he was supported by the other three members of the Commission. It became quickly and painfully clear to Lewis Strauss that if the U. S. was to give thoughtful consideration to building a superbomb, the issue would have to be taken out of the hands of the Atomic Energy Commission.

The logical place for him to appeal was Congress. In 1946, the Congress, in an unprecedented action, had set up a special watchdog committee composed of members of both the House and Senate to keep a close eye on the momentous new questions involving atomic energy. The chairman of this committee was the comparatively new Senator from Connecticut, Brien McMahon. Strauss sent a copy of his October 5 memo to Chairman McMahon.

McMahon reacted as Strauss had hoped. He immediately called representatives of the AEC before his committee and demanded: "What about the super?" . . .

Having just heard that the Soviets had penetrated into the realm of nuclear energy, McMahon presumably expected to be told that all possible progress was being made to keep the United States on top of the new weapons in which true military power must now be measured. Instead he was told by representatives of the AEC that the hydrogen bomb was regarded as a "long-range" project, that in fact little or nothing had been done about it in the AEC laboratories in the four years since the end of World War II.

The replies of the AEC representatives shocked the emotional Senator from Connecticut.

"How do you know that the Russians did not decide from the beginning to shoot for a *hydrogen* bomb?" he shouted at the AEC representatives. "How do you know that the Soviets, now that they have the A-bomb trigger, will not fire off an H-bomb next month?"

The problems posed by the super, the AEC spokesman replied, were immense.

McMahon was not easily to be put off: "Can you imagine the consequences of the Soviets' obtaining a superbomb before we get one? Suppose from now on we start thinking of the H-bomb as a short-range project? In fact, why don't we push ahead with our own H-bomb program right now—without delaying another day?"

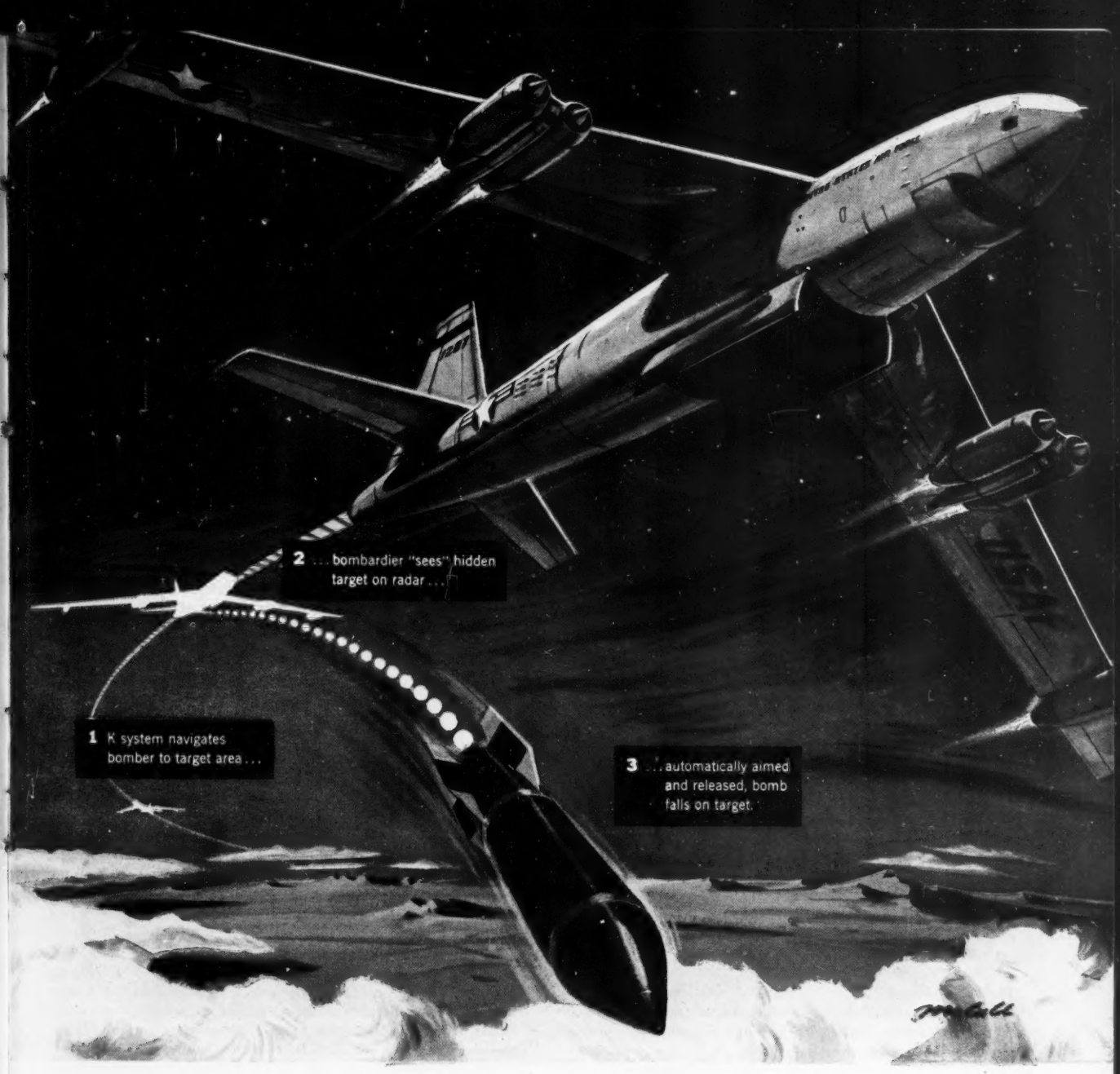
As McMahon was to learn in bitter months ahead, it was by no means as simple as that. There ensued from this briefing of the Joint Congressional Committee a struggle over the question of building a hydrogen bomb in the U. S. that actually did not come to an end until long after the U. S. was again engaged in a shooting war, in Korea. The debate ended only when there could be no further doubt that the Kremlin intended to pursue the Communist revolution around the world and was prepared to resort to force to achieve its goals.

* * *

Much of the struggle—incredible in retrospect—seemed to flow out of the guilt felt by some of the key atomic scientists at having created the atomic weapon in the first place. It was abetted by uncritical acceptance by the people of the theory that because a man might solve a mathematical formula containing twenty-seven unknowns, he is especially equipped as a statesman to determine the affairs of the nation. The scientists retained by the Atomic Energy Commission to advise the Commissioners and the President on technical matters ranged far afield to offer counsel on politics, statecraft, military strategy, ethics, and morality and came within an ace of making their recommendations in these areas stick.

Ironically, moreover, in the very area where their competence would have had to be accepted without question, a great many of them were dead wrong. They said the hydrogen bomb could not be made, or that if it could be made, it would be done at such a cost in U. S. atomic resources as to be harmful in the long run. This advice turned out to be erroneous on both counts. Nothing in the unexplored area of theoretical science can be predicted with the dogmatic certainty with which many atomic scientists discussed the thermonuclear weapon. They all knew this very well at the time but were carried away by their own predilections.

(Continued on page 66)


2 . . . bombardier "sees" hidden target on radar . . .
1 K system navigates bomber to target area . . .
3 . . . automatically aimed and released, bomb falls on target.

USAF DESTROYS UNSEEN TARGETS; PLANES USE RADAR BOMBSIGHT

THE STORY BEHIND THE STORY:

■ You've read headlines like the one above, reporting the precision of Air Force bombing—during tests. Within hours after an aggressor attack, you would read them again—reporting deadly counteraction. Night or day, regardless of weather, America can carry out its policy of instant retaliation to any aggressor—in any part of the world.

■ Now in large-scale production, the Air Force K Bombing System combines automatic navigation with all-weather identification and bombing of any target. With the aid of the Sperry Gyropilot* Flight Control and the K System, the crew flies the high-speed bomber to the target area. Using the Sperry-designed Bombing Navigational Computer, the bombardier locates the target optically, or if hidden, by radar. The effects of speed, altitude and wind on the falling bomb are automatically computed, enabling the bombardier to score direct hits. In simplifying the complex job of bombing at extreme altitude from high speed jets, the K System permits more time and flexibility on the bomb run . . . more certainty of "mission completed."

■ There's little resemblance between this automatic "brain" and the first bombsight developed by Sperry for use in World War I – a simple telescope and range scale no larger than an egg beater. But both were made possible because a military-industry team anticipated the needs of modern defense – then met those needs with a strategic bombing program which authorities credit with helping to prevent a new global war.

*T.M. REG. U.S. PAT. OFF.

SPERRY GYROSCOPE COMPANY

DIVISION OF THE SPERRY CORPORATION • GREAT NECK, N.Y.

The debate eventually turned out well for the United States of America—though years late. It might have just as easily turned out the other way. If it had, the consequences could have been enormous. A later President of the United States gave one opinion.

"If the Soviets had beaten us to the hydrogen bomb," Dwight D. Eisenhower told a White House visitor in the spring of 1954, after the U. S. had finally exploded a droppable H-bomb, "Soviet power would today be on the march in every quarter of the globe."

The Influential Scientist

THE U. S. GOVERNMENT—especially the AEC, Defense Department, Air Force, White House, and Joint Atomic Committee—with its secret inner circles, complex agency relationships, boards, and committees, formed the stage on which the great struggle over the hydrogen bomb was played. But reduced to its barest essentials, the struggle amounted to a personal duel between two extraordinary men, theoretical physicists J. Robert Oppenheimer and Edward Teller.

Both Oppenheimer and Teller are singular products of the twentieth century's still unresolved effort to cope with the impact of the scientific-industrial revolution on morality and the structure of society. Both are sons of upper-middle-class families that raised them in an environment of economic and intellectual security. Both were born to the same religious faith, and both are intensely moral, if not religious men. Both are intellectual snobs.

Here the similarities between Robert Oppenheimer and Edward Teller end, and the differences that produced the great H-bomb struggle begin. Oppenheimer was brought up in an environment almost literally secure from political misfortune. Early in life he flirted with and became fascinated by Communism. He contributed his name and his money to Communist causes. His brother, a close friend, became a Communist, and then his brother's wife. Oppenheimer fell in love with one Communist, married another. When he was called to work on the atomic bomb in World War II, he insisted that Communists be allowed to come with him. Even as late as December, 1953, Oppenheimer considered that a onetime Communist fellow-traveler, Haakon Chevalier, who he had said in 1943 had asked him to pass atomic bomb secrets for the benefit of the Soviets was still his friend.

If Oppenheimer's appraisal of the relationship between politics and morality led him to one set of conclusions, and one course of action, Teller's led him into exactly the opposite. Teller was the son of an unhappy land, Hungary, cursed by geography to lie across one of the principal highways of conflict between East and West. Russia was its traditional enemy. His own lifetime was shaped by the rise of two of the greatest tyrants of history—Adolph Hitler and Joseph Stalin. While Oppenheimer from a distance in the U. S. felt fury at the plight of his fellow Jews under Hitler (and according to his own testimony, went to work on the A-bomb primarily to destroy Hitler and Nazism),* Teller himself in Germany suffered Hitler's treatment firsthand.

Edward Teller had as much reason as any man and more reason than most to have dedicated himself exclusively to the destruction of Nazism. Had he not fled in time, he might have been one of Hitler's victims in the ovens at Dachau. Through this experience, Teller developed a special political talent, rare among scientists, that enabled him to see the Soviet tyrant with the same clarity with which he had perceived the Nazi tyrant. Unlike Oppenheimer, almost from the beginning, Edward Teller became a professed and uncompromising anti-Communist.

* * *

*Though, again by his own testimony, he continued to contribute to Communist causes even after the Hitler-Stalin pact.

Well established by the press as the "Father of the A-bomb,"* Dr. Oppenheimer at the time of "Joe One" had accumulated great prestige and stature among his fellow scientists, some of whom still lingered in military work. He was director of the Princeton Institute for Advanced Study (where Dr. Albert Einstein maintains his headquarters), and President of the American Physical Society. Edward Teller was unknown outside of the community of physicists.

Oppenheimer's influence in Washington, where he was top adviser on atomic energy matters to the President, the Chairman of the AEC, the Secretary of Defense, and other governmental agencies, was enormous. No scientist in the history of the United States was ever in a more powerful political position or a position to influence more directly governmental policy on a high level. No scientist could have had less political influence than Edward Teller.

For a man who once claimed political naïveté, Oppenheimer demonstrated a remarkable talent for getting himself involved in fifty or more political jobs. . . .

Of all his jobs the one far greatest in importance was the Chairmanship of the Atomic Energy Commission's General Advisory Committee. The Committee was established by the same law that created the AEC itself. It was designed to give the AEC Commissioners formal access to the nation's top scientific brains in their efforts to keep the United States abreast of all possible atomic developments.

Because of the general admiration for scientists, inspired by their wartime success in unlocking the atomic nucleus, the General Advisory Committee actually acquired far more influence in Washington than the Congress had contemplated. Soon the scientists were offering—and indeed being solicited for—their opinions on every conceivable area of human activity. The politicians in many cases yielded to the scientists on political affairs; the generals deferred on military affairs; the administrators bowed on administrative affairs; and the strategists stood aside on strategic affairs.

* * *

In addition to his positions of influence, Oppenheimer possessed a rare personality, a captivating, dynamic manner, and a flair for dramatics. He was known as a man who could easily win people over to his side; indeed, few scientists or statesmen had the courage to oppose him in debate. As one famous physicist described him: "He is the master of applied psychology." David Lilienthal once said: "He is the only authentic genius I know." Secretary of State Dean Acheson said that the two greatest minds he had encountered were Lord Keynes and Robert Oppenheimer.

Dr. Oppenheimer became world famous for the work he and his associates accomplished under great pressure at Los Alamos during World War II. Edward Teller also worked at Los Alamos during the war. But because Oppenheimer

(*Continued on page 68*)

*Actually the technical contributions at wartime Los Alamos were made by: Von Neumann, Segrai, Konopinski, Bethe, Bretscher (a Swiss-born member of the British mission), Christie, and many others. If anyone deserved the title "Father of the A-bomb," it was Italian-born physicist Enrico Fermi, who constructed the world's first atomic pile and contributed the key ideas for the atomic bomb.

Forest fires can cause such tremendous losses—and start from such small things. A carelessly dropped cigarette. A campfire not completely out. Don't leave campfires smoldering. Drown them—then stir and drown again. Don't toss lighted matches, cigarettes, cigars or pipe ashes on the ground or out of car windows when in wooded areas.

This advertisement is published as a public service and to save lives and property. Reprints will be furnished without charge upon request.

Standard protection

ÆTNA INSURANCE GROUP

AETNA INSURANCE COMPANY • THE WORLD FIRE AND MARINE INSURANCE CO.
THE CENTURY INDEMNITY COMPANY • STANDARD INSURANCE CO. OF N. Y.
HARTFORD, CONNECTICUT

DON'T GUESS ABOUT INSURANCE—CONSULT YOUR AGENT OR BROKER

Man Who Saves You From Worries

Getting real insurance protection is more than just buying a policy. The personal service your local agent gives can save you a lot of worries. For example, suppose you have an automobile accident, a fire or some other form of loss. Most of us feel a little bewildered when such things happen. It sure takes a load off your mind—and quick—to be able to pick up the phone and get expert advice from your local agent.

Follow these time-tested rules:—

CONSULT YOUR AGENT OR BROKER
THINK FIRST OF THE AETNA

did not like him personally—a fact that was perhaps traceable to their differing political views—Teller was denied a specific job in connection with the development of the atomic bomb.

Thus, while Oppenheimer and his men concentrated on the detail work of actually putting together an atomic bomb, Teller, who was assigned a corner in the Theoretical Division, was left free to think. It was in a sense a rare opportunity. Not many scientists in the free world at that moment of history were permitted the luxury of thinking.

Teller put his thinking time to good use. His mind ranged across the broad spectrum of atomic energy; he foresaw and planned for benign uses of the atom, such as the reactor to make electric power, and the use of isotopes in medicine. He thought of new and different methods of making atomic weapons and urged that the U. S. never slacken this effort because he believed it essential to freedom. In the quiet of his laboratory, Teller conceived a wholly new type of nuclear bomb, one that could be a thousand times as powerful as the atomic bomb.

In the regimented community at Los Alamos dominated by Robert Oppenheimer, Edward Teller was not a very happy man . . .

It was during the early work on the atomic project at Los Alamos that Teller first began to think about a super atomic bomb, of a new order of magnitude beyond the work at hand. Teller is widely known as "an order of magnitude man." How tall is man? Ignoring the fact that man can range from a few feet tall to seven or more, Teller would say: "Man is of the order of one and three-quarters meters tall."

The new order of magnitude of atomic energy grew into Teller's thinking as a result of his earlier work with Gamow [Dr. George Gamow, of George Washington University], work that had led indirectly to a significant paper published by the eminent Hans Bethe on the source of the energy of the stars. At George Washington University, Gamow had been interested in this phenomenon and had discussed the matter with his brilliant associate, Teller. Together they worked out theoretical formulas for certain kinds of thermonuclear reactions (atomic disintegration at high temperatures or alchemical burning, as Gamow called it). Bethe, already one of the great men of physics, came down to Washington to a conference Gamow had called. He stayed at Teller's house and heard of the work Gamow and Teller were doing. Bethe thought about it on the train returning home, Gamow says. He continued to think about it and soon published his significant work, which eventually led the way to the concept of a thermonuclear or hydrogen bomb.

The stars, Bethe calculated, burned the lightest element, hydrogen, into the next element on the atomic scale, helium. The process actually took place only in the interior of the stars where temperatures reached millions of degrees. Even at these temperatures the fusion of hydrogen into helium was a reaction of several million years' duration.

To approximate this process on earth, which is literally what Teller hoped to do, much hotter temperatures were required, perhaps as much as five or ten times the temperature of the interior of the sun. Even then ordinary hydrogen—such as might be used to inflate a circus balloon—could not be burned in a superbomb. But hydrogen had two less stable isotopes (heavier forms of the gas) known as deuterium and tritium. Deuterium occurred in nature and combined chemically with oxygen to form "heavy" water. Tritium had not occurred naturally on earth for possibly a billion years.

The successful detonation of the atomic bomb at Alamogordo on July 16, 1945, furnished strong indication that sufficient temperatures could be generated in an atomic explosion to ignite a mixture of the two isotopes of hydrogen, deuterium and tritium.

Encouraged, Teller and his assistants went back to the laboratory in high hopes. In the summer of 1945, Teller, assisted by Robert Oppenheimer, drew up a report on the H-bomb for Secretary of War Henry Stimson's special "Interim Committee." The report declared that the superbomb was probably feasible and urged that the U. S. proceed with the development of such a bomb.

It was generally understood at Los Alamos that the next large-scale laboratory effort would be the hydrogen bomb. Fermi was to head the effort; Bethe and Teller were to be his key assistants. Fermi had already begun a series of lectures as a preliminary to the new program.

Then, in August, 1945, with Hiroshima and Nagasaki, came the end of World War II. Oppenheimer, who had worked so hard to organize Los Alamos, suddenly began urging that it be abandoned. Work on weapons was sharply curtailed. The scientists went back to the universities and colleges. Practically alone, Edward Teller remained for a while at Los Alamos in a vain attempt to push his superbomb through to completion before the laboratory disintegrated completely.

Dr. Norris Bradbury, who succeeded Oppenheimer as Director of Los Alamos, later approached Teller and asked him if he would remain to direct the Theoretical Division. Teller, who was still anxious to push his bomb through to completion, answered that he would stay provided one of two conditions was met: (1) either that the laboratory launch a vigorous fission-weapons program contemplating the testing of at least twelve weapons a year, or (2) that the laboratory concentrate on a thermonuclear program.

Bradbury replied that the programs were out of the question.

The Physicists Have Known Sin

THE DESIRE TO return to private life from the government laboratories was understandable. Every theoretical physicist prefers the campus and pure research to the black art of "applications," as he terms weapons development. Life at Los Alamos was tense and strained, almost quasimilitary.

Moreover, a large segment of the U. S. was morally uncertain at war's end over the act of having created and used a weapon with the killing power of the atomic bomb. This uncertainty spread quickly through the ranks of the atomic scientists and soon became a chorus of remorse articulated most eloquently of all by Dr. Oppenheimer.

Soon after the war Oppenheimer proposed abandonment of the weapons laboratory entirely and was widely quoted as suggesting that the U. S. "give Los Alamos back to the Indians." In one single sentence he offered himself as spokesman for the conscience of the atomic physicists:

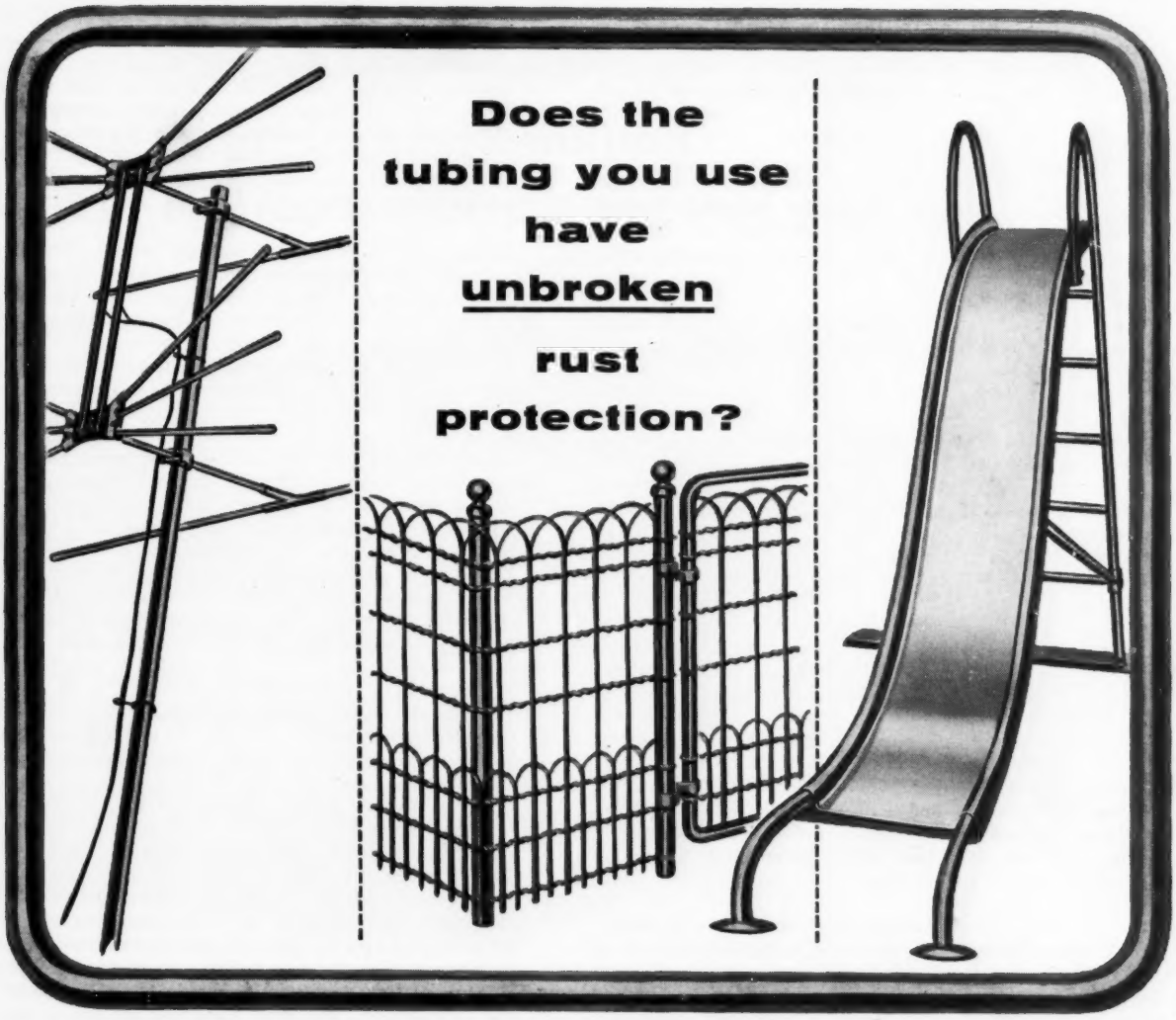
"In some crude sense, which no vulgarity, no humor, no overstatement can quite extinguish, the physicists have known sin and this is a knowledge which they cannot lose."

On one occasion, at the White House, Oppenheimer had wept in the presence of President Harry Truman because of the "blood on our hands."

But Oppenheimer was by no means the only spokesman for the tortured conscience of U. S. atomic scientists.

Professor E. A. Shils, a member of the Board of the *Bulletin*

(Continued on page 70)

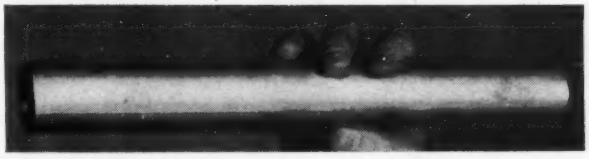


Armco offers a new kind of zinc-coated welded steel tubing with *unbroken* rust protection along the weld. Called Armco ZINCGRIP Tubing, its weld flash is planed off... and the zinc coating is then renewed on the outside over the weld.

The specially applied coating on ZINCGRIP Tubing stands up under any fabricating operation the steel can take. The zinc doesn't peel or flake... even where the tubing is bent and twisted into sharp angles.

Armco ZINCGRIP Tubing is one of many kinds of Armco Welded Steel Tubing for a wide variety of products. There are many shapes to choose from to give your product extra strength with simpler, more attractive design.

For more information about Armco Welded Steel Tubing, fill in and mail the coupon at right.



Almost invisible weld seam of Armco ZINCGRIP Steel Tubing is coated outside with zinc for unbroken rust protection.

ARMCO STEEL CORPORATION
444 Curtis Street, Middletown, Ohio

Please send me booklet on Armco Welded Steel Tubing.

*Name*_____

*Address*_____

*City*_____ *State*_____

ARMCO STEEL CORPORATION

MIDDLETOWN, OHIO

SHEFFIELD STEEL • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

of Atomic Scientists, has described the attitude of his colleagues:

> The detonation of the first atomic bomb against the Japanese in August, 1945, was greeted with great enthusiasm by most journalists and by the population at large. Only a small proportion of the population saw the catastropic possibilities, and these people were mainly scientists who had been at work on the bomb over the preceding seven years.
>
> A group of scientists, numbering about a thousand, formed the nucleus of a great effort to modify American opinion. Of these, only a few hundred were really very active. This action taken by American physical scientists was unprecedented. For the first time, scientists on a grand scale showed awareness of the effects of their work and a sense of responsibility to prevent its misuse. Their fervor came partly from their deep and guilty insight into what the bomb could do, partly from their startling discovery of their political potency, and partly from their long-rankling dissatisfaction and uneasiness over the military's regimentation of their scientific skills for the purposes of destruction.

The mood of this faction of the atomic scientists was almost irreconcilable. The average citizen, himself shocked by the enormity of Hiroshima, was not quite prepared for the guilt of Los Alamos.

These scientists, it developed, had contributed their genius in what they conceived as a total effort against total evil in the form of Adolph Hitler. When Hitler was cremated in a gasoline fire in the garden of the Reichschancellery, a sense of having created an unnecessary evil overwhelmed them. Some could not trust their own government with such a weapon. . . .

The immediate target of the scientists' lobby was the May-Johnson bill, the Administration's original, or pre-McMahon, bill for the control of atomic energy. Because it contained provisions for military participation and enforcement of security rules, the scientists branded it militaristic and opened a campaign against it. An analysis has been made of the campaign by James R. Newman and Byron S. Miller, in their *The Control of Atomic Energy*. These two legal advisers to the original Senate Atomic Committee wrote:

> The first to sound the alarm were the scientists. . . . In large numbers they swarmed down from their ivory towers, and with energy, fervor, passionate conviction, and a somewhat unexpected talent for organization threw themselves into the battle. It may be that they were grossly naïve in politics, but there is no denying that they showed a capacity for improvisation and prompt action beyond anything the economic groups whose interests were vitally involved in the legislation were able to muster. . . .
>
> The scientists were first to enter the field and they remained throughout in the forefront of the battle. They formed their own local groups throughout the country; they helped in the formation of citizens' committees; they furnished data to Congressmen, publicists, and commentators. It was not long before they were joined by a large and variegated army, which it would have been difficult to unite in any other cause. In the ranks could be found representatives of every shade of political opinion, from radicals whose position might be taken for granted to true conservatives. . . . Newspapers of every gradation of political opinion condemned the military features of the May-Johnson bill. Professional societies, women's clubs, church federations, labor unions, veterans' groups, and university students adopted resolutions denouncing the provision. Letters and telegrams of protest poured into the White House and offices of the Congressmen; the Senate Special Committee alone received over 75,000 messages, of which the overwhelming majority opposed [specific military provisions of the bill]. . . .

In the fight for civilian vs. military control of the atom, Dr. Oppenheimer became an important factor. Though originally in favor of the "military" May-Johnson bill, he switched and helped push through the scientist-sponsored McMahon bill for control of atomic energy.

Turning to another goal, Oppenheimer was the dominant author of the 1946 Acheson-Lilienthal plan for international atomic control. As originally written, the plan called for construction of atomic facilities within the Soviet Union, possibly including weapons facilities, and did not deny the Soviets the veto power in matters relating to atomic energy.

A few men in the government noted with alarm that the campaign in some respects was not in what they conceived to be the best interests of the United States. . . .

Clearly, the production of conventional atomic weapons was not vigorously pushed following World War II. In fact, after the scientists deserted Los Alamos, there was a serious effort made to shut down the laboratory and cease weapons production altogether.

• • •

The majority report of the Joint Committee on Atomic Energy published in 1949, following its investigation of Senator Hickenlooper's charges against David Lilienthal of "incredible mismanagement," had this to say:

> Uncontradicted testimony showed that in 1947, when responsibility was formally transferred from the Manhattan Engineer District to the Commission, our weapons position verged on the tragic. The United States then possessed so few bombs, according to Mr. Lilienthal, that we might have tempted fate if public statements even mentioned the importance of numbers in building an atomic deterrent to aggression. Dr. Robert F. Bacher, an original member of the Commission, and now Chairman of the California Institute of Technology Physics Department, told the Joint Committee that he personally made an inventory of our stockpile early in 1947 and that he was both surprised and "very deeply shocked by the meager findings."

In these same hearings, Oppenheimer had been asked by McMahon: "Are you satisfied with our weapons progress since the end of the war?" Oppenheimer replied: "It is my business not to be satisfied, but I am."

One goal of the antiweapons campaign waged by the scientists in Washington in 1945 and 1946, it seemed, was to create the impression that Teller's "superbomb" was not feasible or practicable. In the fall of 1945, after leaving Los Alamos, Oppenheimer, in a second report to Stimson's "Interim Committee," reversed his earlier report on the "super," and urged that the program be discontinued.

During the atomic hearings on the McMahon bill in Congress, Oppenheimer was asked about other methods of releasing atomic energy. In reply, Oppenheimer referred to Dr. Bethe's theory that the sun's energy derives from a series of fusion reactions involving light nuclei, and said: "It is conceivable that development of this kind might be carried out terrestrially but I am sure I don't know how, and I do not think it is an immediate prospect nor a very likely one. So my answer—a rather long answer—is to the best of my knowledge, 'No.'"

(Continued on page 72)

This smart business woman can drive 8600 cars...without buying one!

Amazing but quite true! When many modern business women travel by train or plane, they rent a new car from Hertz at their destination. Or, they rent a car in their own city for local business calls. Yes, in your own city . . . and in more than 550 cities throughout the world . . . Hertz Service offers you 8600 cars! The rental rate is quite reasonable. For example: At the Hertz office in Portland, Oregon, the 24 hour daily rate is $7.00, plus 8 cents per mile, including gasoline, oil and insurance. The total cost for a trip of 30 miles in one day is only $9.40, whether one person or five ride. Rates are lower by the week. Rates vary slightly in different sections of the country.

RENT A NEW CAR FROM HERTZ
...drive it as your own

HERTZ SERVICE: what it is and how to get it

Hertz Rent-A-Car Service is available in more than 550 cities throughout the world. You can rent a new Ford or other fine car for an hour, day, week or longer and drive it as your own wherever you please.

Hertz furnishes all gasoline, oil, Public Liability, Property Damage, Fire and Theft Insurance, and $100.00 deductible collision protection—*at no extra cost!* Should you buy additional gasoline or oil, Hertz reimburses you for the full amount.

How to Get It—Look in your telephone directory under "H" for your nearest Hertz office. Show the Hertz attendant your driver's license and proper identification, and off you go in a new clean car.

Advance Reservations—To be sure of a car locally or in another city, make a reservation in advance. Any Hertz office will reserve a car for you, anywhere. Also, any airline or railroad ticket agent will make a reservation for you when you reserve your space or purchase your ticket. *Always insist on Hertz!*

Hertz Charge Cards, honored at any Hertz office, are issued to business firms and individuals who qualify. The card serves as identification, eliminates deposit requirements, and provides credit privileges if desired. Holders of Air Travel Cards and Rail Credit Cards enjoy the same privileges.

Additional Information—Call your nearest Hertz office or—write or phone Hertz Rent-A-Car System, Dept. 794, 218 South Wabash Avenue, Chicago 4, Illinois. Phone WEbster 9-5165.

HERTZ *Rent-A-Car* **SYSTEM** Now serving you in more than 550 cities throughout the United States, Canada, Alaska, Mexico, Hawaii, New Zealand, Cuba, Haiti, Puerto Rico, the Virgin Islands, Great Britain, Ireland and Switzerland.

Teller, who, as Oppenheimer knew, was at least within sighting distance of a successful H-bomb, was baffled by the attitudes of his brother scientists. He hurried to Washington to testify in a different vein: "The atomic bomb is in its earliest infancy and even a moderate amount of work may improve it considerably. Future bombs may become less expensive, may be easier to handle, and they may have a much greater destructive power. *I am convinced that it will not be very difficult to construct atomic bombs which will dwarf the Hiroshima bomb in the same way that bomb has dwarfed high explosives.*" (Authors' italics.)

Against Oppenheimer, Teller's views had no weight. Immediately after Teller spoke, the Committee adjourned. Teller went back to Los Alamos.

While other atomic physicists remained in Washington working to help create a new world state and a new order of society in which there would be no wars, no atomic weapons, no atomic secrets, Teller worked away quietly at Los Alamos, in a last-minute attempt to retain the services of some of the departing scientists, so that he could push forward with the superbomb. He met with no success....

As a final try at saving the superbomb program, Teller and Fermi organized and conducted at Los Alamos in April, 1946, a meeting of thirty top U. S. nuclear physicists. The report on the conference was issued in June. The conferences, which later became known as "The Final Conferences on the Super," were conducted as seminars on the hydrogen bomb. The purpose of the conferences was to make it clear that the hydrogen bomb was technically feasible and practicable. Among the thirty physicists who attended these "Final Conferences on the Super," was unfortunately one physicist who later became infamous. His name was Dr. Klaus Fuchs.

This dramatic, last-minute effort failed to spur the government into proceeding further with the H-bomb. The influence of Oppenheimer and his associates was too great. The conference reports, one of which described in detail how a hydrogen bomb could be assembled within two years' time, were forwarded to Washington for a decision by the highest levels of the government. But no decision was ever forthcoming. The reports did not even reach President Truman's desk. They were filed away in the AEC, and to all practical purposes, forgotten.

Dr. Teller was advised by Enrico Fermi not to weary himself by working on atomic weapons in peacetime, especially when it was obvious that the government had no interest. Fermi invited Teller to join him at the Physics Department at the University of Chicago, and Teller accepted. After three years at Los Alamos, he departed, greatly concerned because the program had been allowed to die.

In the quiet, academic atmosphere at Chicago, Teller, who could not get his mind off the badly lagging U. S. atomic-weapons program, kept plugging away for his now derelict H-bomb program whenever the opportunity presented itself. Many scientists branded him a warmonger.

• • •

During 1948 and 1949, the hydrogen-bomb program, in spite of increasing Russian intransigency and Teller's vigorous needling and prodding, remained derelict. In 1948, the bomb was discussed briefly in a Department of Defense ten-year "objectives study," but dismissed by Committee Chairman J. Robert Oppenheimer as "long-range" and beyond the capabilities of the Atomic Energy Commission. At about the same time, the AEC's General Advisory Committee, under Chairman Oppenheimer wearing another of his many hats, recommended against a hydrogen-bomb program, and gave as the basic reason the fact that the Defense Department had not asked for it. Dr. Oppenheimer as GAC Chairman wrote that the panel report (Dr. Oppenheimer, Chairman) was a fine job.

There for four years the superbomb rested—largely because nobody in the United States Government had been able to mobilize the intellectual and moral energy necessary to overcome the resistance to it.

• • •

For a Crash Program

HAPPILY FOR THE free world not all U. S. physicists were paralyzed by the guilt of Los Alamos. There was a minority, extremely small in numbers but vigorous in anxiety over the future of a nation that failed to look to its atomic weapons. Ironically, most* of these scientists were associated with the sprawling University of California at its Berkeley campus, where Dr. Oppenheimer in the prewar years had learned his first politics and developed his Communist associations. When they heard the news of "Joe One," these scientists remembered the appeals of Edward Teller.

The most important member of this tiny group was the energetic, absent-minded developer of the cyclotron and its important successors in the mechanics of atom smashing, Dr. Ernest Orlando Lawrence, Professor of Physics at the University of California at Berkeley. Lawrence, who combined shrewd administrative ability with political savvy (and a weakness for the capitalistic comforts of U. S. life such as chauffeur-driven Cadillac convertibles), was also Director of the University of California's Radiation Laboratory, a major AEC facility operated by the University under contract with the Commission.

Several days after the White House announcement, Lawrence was at lunch at the Faculty Club in Berkeley with a colleague, Dr. Wendell M. Latimer. Like many other scientists that week they discussed the news of "Joe One." As they left the Faculty Club, Latimer said to Lawrence: "We ought to get busy right away with the thermonuclear program." Lawrence agreed.

Several hours later, Lawrence went up on the "Hill" at Berkeley for a chat with his friend and fellow scientist, Dr. Louis W. Alvarez. Lawrence found that Alvarez like Latimer was strongly in favor of investigating the thermonuclear program. That afternoon, the three men agreed to press their views on the U. S. Government, when they arrived in Washington the following week on a scheduled trip.

Later, by telephone that evening, Lawrence and Alvarez began a search for Edward Teller. They found him at Los Alamos. At the time of the announcement of "Joe One," Teller was just returning from a short trip abroad. He heard the news while passing through Washington on his way back to the University of Chicago. Teller had called Oppenheimer to get his reaction. Oppenheimer told Teller to "Keep your shirt on," and advised him to go to Los Alamos to do what he could for the work there (the weapons laboratory was then engaged exclusively in fission-bomb research).

The telephone connection was not good from Berkeley to Los Alamos. After a brief conversation, Lawrence and Alvarez decided it would be to their advantage to leave for Washington a day early and stop off at Los Alamos for a talk with Teller. Much had happened in four years. They needed

(Continued on page 88)

*Dr. Karl Compton, the late great president of the Massachusetts Institute of Technology, wrote a letter to President Truman at about this time urging an all-out effort to build the hydrogen bomb.

Miss West Virginia proudly shows off her *New Washing Machine*

Come into the western hills of the Mountain State and see the newest thing in the "laundering" of coal.

It's the *Williams* Preparation Plant of Pittsburgh Consolidation Coal Company, a valued customer of the Western Maryland Railway.

This plant straddles a 7-foot thick layer of rich bituminous. Mine and preparation plant between them can turn out 8.5 thousand tons of clean coal a day; 2 million tons a year. And keep doing it for the next 40 years.

Miss West Virginia's washing machine water-washes every piece of coal; then sorts into commercial sizes, from 5-inch lumps down to ⅜-inch slack.

And does it *automatically*. There are three machinery-filled acres of busy floor space in the plant; yet the operation is so completely automatic that five men run it. Just five men on any one shift!

That doesn't count, of course, the Western Maryland crews who bring in and haul out trainloads of cars that carry coal from this plant to waiting markets.

The Western Maryland hustles this and millions of tons of coal from other mines to public utilities, manufacturers, and home heating customers in the East, the Great Lakes area, Canada; and overseas via the road's Port Covington Terminal in the Port of Baltimore.

Are you interested in coal as a user? A buyer? Or are you hunting industrial opportunities in this rich Coal-Bin of America? There are many ways we might serve you. Do you want prompt action? Phone our nearest office. There's a coal expert there, ready to help you.

WESTERN MARYLAND RAILWAY

St. Paul Place, Baltimore 2, Md.

Short Cut for Fast Freight

How Executives Rate Own Stocks

Some Are Buying, Some Selling—Here's the Story

Question of what company officials are doing in the stock market is one that always intrigues investors.

Reason: Insiders have information unknown to the public.

Official reports of insiders' stock dealings show that some are buying their firms' shares, some selling.

Tally of these reports, though, reveals interesting patterns.

"Insiders"—officers and directors of corporations—with intimate knowledge of their own companies and industries, take differing views of the present bull market in stocks.

In some industries, these insiders are buying more stocks in their own companies than they are selling. These officers apparently think that the market price of stocks in their companies is going to rise. They are bullish.

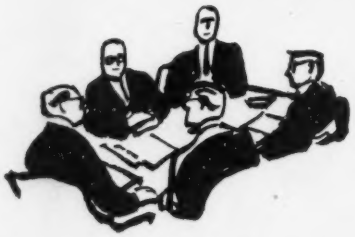
In other industries, officers are selling more of their own stocks than they are buying. They indicate an impression that market values are higher than justified by their inside knowledge of company affairs. They are bearish.

Corporate insiders long have been watched as possessors of knowledge not available to ordinary buyers of stock. In New Deal days, Congress put such a high value on the power of "inside" knowledge in the stock market that it passed a law designed to spread some of that power among other investors. Insiders are required to report their transactions in the stocks of their own companies.

The table on this page, drawn from reports to the Securities and Exchange Commission, gives you the picture of how insiders have sized up the market for common stocks. "Net sales" and "net purchases" reveal how they have operated in the market directly for their own account. Many, of course, have been both buying and selling. But these figures—tabulated by the Economic Unit of *U. S. News & World Report*—show the net results of these purchases and sales.

Judgment of the insiders, in many cases, has been much like that of the general investing public. In other in-

SALES AND PURCHASES BY COMPANY OFFICERS



Net purchases or sales, by corporation officers and directors, of common stock in their own companies— Dec. 11, 1953, to July 10, 1954

OFFICERS BOUGHT THESE STOCKS (NET INCREASES IN HOLDINGS)

Motion pictures	57,500 shares	Tobacco	3,370 shares
Foods	24,731 shares	Investment trusts	2,200 shares
Aviation	20,554 shares	Machinery	1,632 shares
Oils	15,265 shares	Television	1,583 shares
Building materials	5,750 shares	Dry goods	960 shares
Retail trade	4,780 shares	Packing	800 shares
Electrical equipment	3,750 shares	Grocery chains	600 shares

OFFICERS SOLD THESE STOCKS (NET DECREASES IN HOLDINGS)

Chemicals	16,767 shares	Steel and iron	3,530 shares
Air transport	16,231 shares	Drugs	2,250 shares
Liquor producers	14,500 shares	Rubber	2,199 shares
Installment finance	12,625 shares	Paper	1,709 shares
Machine tools	10,139 shares	Textiles	705 shares
Automobiles	6,200 shares	Railroad equipment	640 shares
Auto equipment	4,716 shares	Farm equipment	608 shares
Office equipment	3,545 shares	Copper, lead, zinc	300 shares

Source: SEC

© 1954, By U. S. News Pub. Corp.

stances, the inside view appears to differ somewhat from the public view.

Tobacco industry's officers and directors offer an example of rare unanimity.

That industry, in recent months, has been hit by medical reports implicating cigarettes in a number of serious human ailments. The medical profession itself has been sharply split on the real meaning of the evidence offered. Yet smokers, in some cases, have reduced their use of cigarettes.

Tobacco shares have declined in a strong bull market, despite good profit showings of tobacco manufacturers.

Result has been to leave tobacco-industry insiders completely undaunted, if their stock dealings are an indication. In the seven months ending July 11, they added to their holdings some 3,370 shares of their own companies' common stocks. Not a single insider reported disposing of one share.

To tobacco insiders, the decline in their industry's stock prices apparently offered nothing worse than a chance to pick up some tobacco shares at what they considered bargain prices.

Machine-tool insiders have not shown the same confidence.

Despite some drop in machine-tool output from past record levels, sales remain high as defense and business orders are filled. And prices of machine-tool companies' common stocks rose by an average of more than 25 per cent in the seven months ended July 8.

Incoming orders for machine tools, on the other hand, have ebbed sharply. In July, when new orders amounted to half as much as they did a year earlier, the industry had on its books only enough orders to keep companies going for an average of 3.4 months. That backlog had been 7.4 times monthly sales in July, 1953, and 23.5 times in September, 1951.

What the industry's insiders did in the seven months ended July 8 was to reduce their holdings of their own companies' stocks by 10,139 shares.

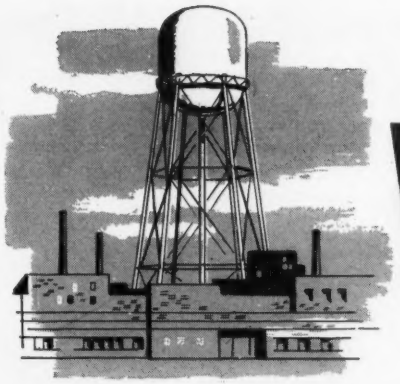
Television industry, after a sharp rise in stock prices in years that followed the war, was hit by uncertainty early in 1954.

Some industry officials thought that families interested in buying TV sets were going to wait for color television. Yet nobody seemed to know when color TV would be available at prices that people could afford to pay.

Most insiders in the industry, though, were confident of the long-term trend. With new areas opening up to TV, the population growing and more families deciding on two sets instead of one, insiders felt the prospects were good.

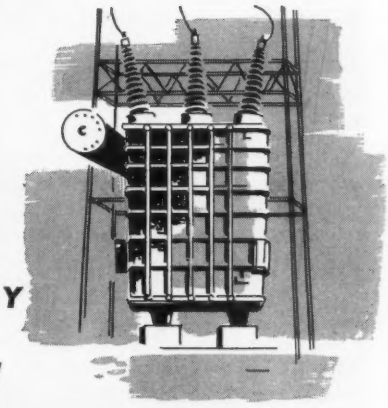
They, accordingly, added 1,583 shares to their holdings. Recently, a sharp up-

(Continued on page 76)



WATER
FOR INDUSTRY

POWER
FOR INDUSTRY

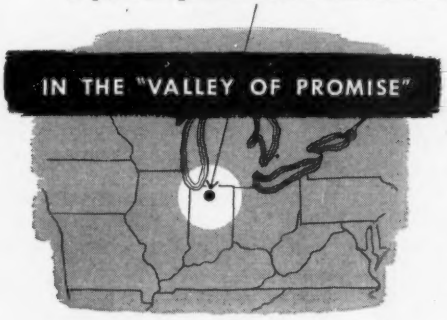


—IN ABUNDANCE!

Pure water, from deep artesian wells, at a maximum temperature of 54 degrees, is in abundant supply in South Bend and Mishawaka. National surveys show this to be a "major groundwater area." New wells are being tapped and pumping facilities increased as the need develops.

A new steam-electric generating plant, largest of its kind in Indiana and part of a network with a capacity of 4,000,000 kw, provides ample power for industry. All of the utilities for efficient operations, and the resources for broad industrial expansion are here in the South Bend - Mishawaka area. Your request for plant-site information will be held in strict confidence.

IN THE "VALLEY OF PROMISE"



Here a network of rail, highway and air transport carries your products to market, and brings raw materials to your plant, *at costs in the lowest bracket.*

Location in relation to the national market, natural resources, utilities and labor supply make this truly the "Valley of Promise" for industrial development. For detailed information write: Committee of 100, Suite 309, National Bank Building, South Bend, Ind.

SOUTH BEND and MISHAWAKA, INDIANA

COMMITTEE OF 100

Get all the sales your advertising makes!

When your national advertising sends customers to your dealer, they are often pre-sold on a particular model. If the dealer doesn't stock it, he switches your sale to another brand.

Label the dealer unmistakably with the public . . . and he becomes *your* dealer! A dominating brandname sign on his storefront "signs him up" *with the public* . . . completing the cycle you started with your national advertising. Now, public recognition *makes* him your dealer. The people who see your name in front of a dealer's store naturally look to him for your products. They will soon show him that they expect him to carry *every* model of your line. Then, if there's any switching of brands, it will all be in your favor.

Shown are two of the many styles of Plastilux® signs available.

Write for free subscription to SIGNews . . . or one of our SIGNvertising® Engineers will gladly call to assist you in planning your dealer identification program.

NEON PRODUCTS, INC.
308 NEON AVE., LIMA, OHIO
In Canada: TEK PLASTICS, Ltd., Toronto, Ontario

turn in television output seemed to confirm their confidence.

Motion-picture industry, meanwhile, has been battered by competition from television and other amusements. Shares in the industry, even so, showed a price rise that averaged nearly 20 per cent in seven months ended July 8.

Now, the industry may have struggled past its low point. Insiders seem to think so, anyway. Or perhaps they anticipate bigger sales of film for television.

Motion-picture insiders, in any event, have added to their holdings 57,500 shares of their own companies' stocks.

In the oil industry, too, insiders have succeeded in ignoring some short-term figures. Large inventories, a threat of oversupply and some price declines appear to have held back a market rise for petroleum shares.

–Three Lions

IN SIZING UP STOCKS . . .
. . . company officials have an edge

The insiders, however, have given their industry a vote of confidence by expanding their holdings of their own corporations' stocks by 15,265 shares. Now, prospects for a gradually rising demand for petroleum products appear to support their view of the industry's prospects.

Retail sales, at the same time, have been sluggish and trends in consumer spending highly uncertain. Yet insiders in large retail-merchandising firms, drygoods outlets and food chains apparently remain optimistic. With one eye on a steadily rising population, they have added to their shares. So, too, have insiders in food processing and packing.

In some other fields, insiders seem more impressed with recent experience.

In the auto industry and its supplying groups, for example, output is down from 1953 levels. Advances in stock prices have been smaller than average. Insiders have sold about 11,000 more shares in their own companies than they have bought.

For the drug industry, sales in the first half of 1954 were down a bit, and stock prices up only slightly. Profits have been sapped by heavy research spending, keen competition and lower prices. Industry insiders have reduced their holdings of their own firms' stocks by 2,250 shares.

In iron and steel, a drop in operations to less than 70 per cent of capacity has been accompanied by net sales of 3,530 common shares by insiders.

In aviation, a defense boom—with a strong tide of new orders and a large backlog of unfilled orders—is interpreted to mean continued good earnings. Insiders have increased their stake in those earnings by adding 20,554 shares of their own companies' stocks.

You get this same picture in the industry that produces the materials for one of history's biggest building sprees. Insiders in the building-materials industry have acquired a net of 5,750 shares of their firms' stocks.

There is this same tendency to follow output and earnings trends in railroad equipment, farm equipment, textiles, rubber, chemicals, "other" metals and liquor. An uncertain outlook has perhaps been a factor behind the unloading of stocks by insiders in these industries.

Stock options, and their use by company officials, clearly have some influence on these figures. Most of the insiders' share buying through options has been excluded from this tabulation. Some such purchases, though, are included.

Some of the reported purchases through stock options, omitted from the tabulation, are in rather large amounts.

In the booming aviation industry, where the use of options to encourage executives is a widespread practice, insiders bought nearly 25,000 shares through the exercise of their options in the first half of 1954. And insiders used options to buy 15,000 shares in the electrical-equipment industry, 1,500 shares in rubber and more than 1,000 shares in the petroleum industry.

Full meaning of the dealings of insiders is something that each investor has to decide for himself. Insiders are influenced in their trading by most of the same factors that ordinary investors take into account. Personal inclinations, family situations, other things enter the picture—in addition to any inside information that corporation officers and directors may have.

Even so, these side factors have not prevented the stock transactions of insiders from being a matter of interest.

New Opportunities For Industry

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY...
WHICH SERVES MANKIND

For ideas that may help you

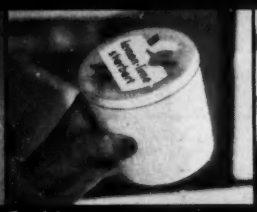
Improve products

Develop new products

Increase sales

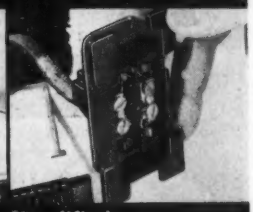
Study the following five pages

Improved Fabrics



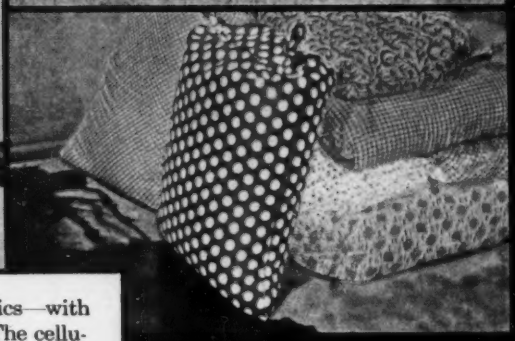
Building Sales

Expanding Markets



Simplified Production

"Vaccinated" cotton dyes deeper, becomes rot and mildew proof



REACTING COTTON—staple, yarns or fabrics—with acrylonitrile causes an amazing transformation. The cellulose becomes "immunized" against rot, mildew and deterioration by heat. New properties develop. Cotton yarn or cloth, for example, dyes more easily to deeper shades with less dye. Fabrics retain two to four times more original strength when heated as high as 320°. Yarns have more stretch! Acrylonitrile treatment promises longer-lasting cotton tire cord, conveyor belts, cable wrapping; rot-proof tents, tarpaulin, irrigation dams; cotton sacks that won't "rot out" when stored in damp, humid places.

MORE COLOR is "picked up" by treated yarns and fabrics, even though equal amounts of dye are used. Economical!

LONGER LIFE for ironing-board covers, shirts, dresses and many types of industrial fabrics is achieved with heat-resistant treated cotton.

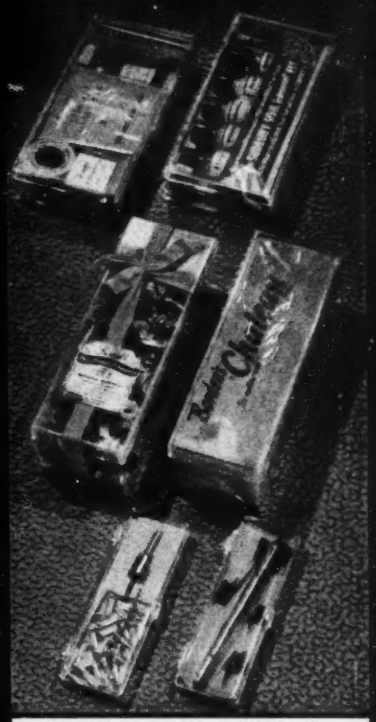
MORE STRETCH before breaking is an added property of treated cotton. Aids in the weaving, construction and snug fit of cotton slip covers.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

Increased eye-and-buy appeal added with plastic packages

SALES REPORTED DOUBLED when buyers see products attractively displayed in clear plastic containers molded of Lustrex. This 16-oz. container "sells" for you in self-service markets. Makes colorful fruit-filled ice cream, fruit jelly or salads appetizing and appealing. Other products—from hosiery to hardware—get a sales lift and added protection when packaged in plastics. Check the sales boost by a test merchandising with a plastic package.



PLASTIC STOCK BOXES, that pro-rate mold costs, may be ordered from custom molders in 257 styles, sizes and shapes. Write for special "Stock Box Catalog."

NEW DRIPLESS MEAT TRAYS—thin-walled, flexible, strong, non-absorbent, disposable or reusable—are now available, molded of Lustrex Hi-Test 88. Investigate!

APPETITE APPEAL sells more food products, gives gourmet foods a real premium look when they are packed and displayed in containers molded of Lustrex. In 4-oz. and smaller sizes, cost is actually less than any other containers.

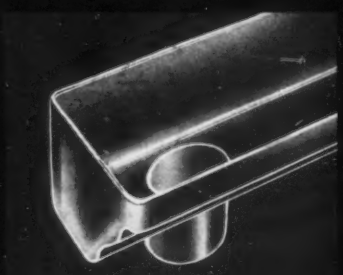
Lustrex Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS—PLASTICS

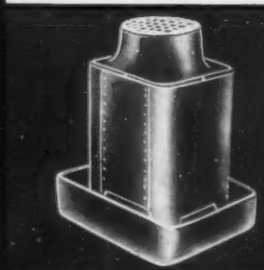
SERVING INDUSTRY...
WHICH SERVES MANKIND

Reinforced plastics open new markets for new products

FIBROUS GLASS, laminated with polyester resins, is creating entirely new industries. Using corrugated sheet, for example, awning makers are developing large markets for translucent awnings. Lumber companies find ready sales for pre-cut "packaged" patios. Experienced custom molders now sub-contract for products or product parts that range from automobile bodies to lightweight bathtubs. Write Monsanto for names of resin suppliers and custom molders.



GUTTERING and downspouts —lightweight, non-rusting reinforced plastic—will soon be offered by alert manufacturers.



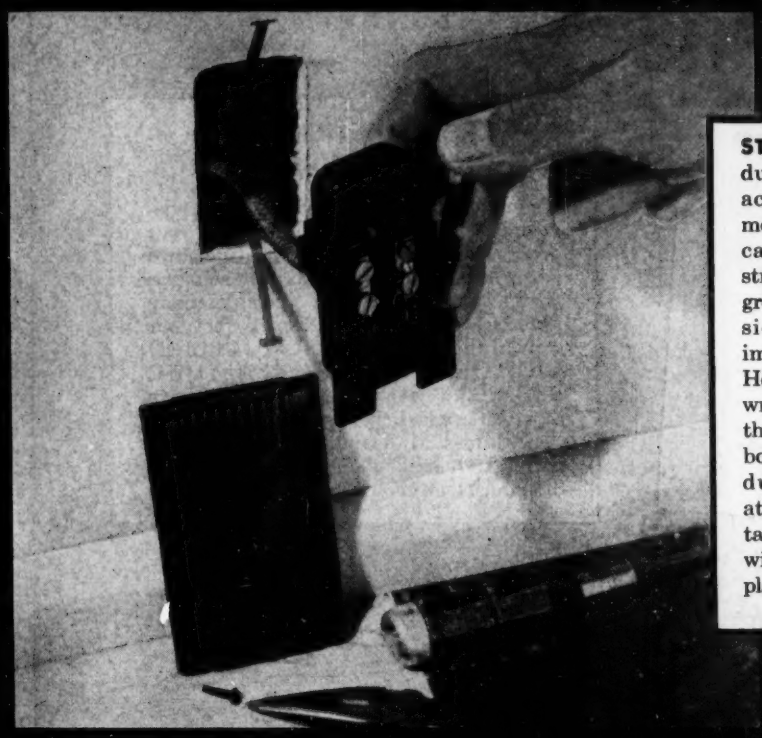
WATER-COOLING TOWERS for home air conditioning can be easily assembled with six reinforced plastic parts made from three simple molds.

ONE-PIECE MOLDED TANKS of glass reinforced plastic are lightweight, rust proof, dent proof, heat resistant. Pressure tanks are available in shapes shown, in varying sizes and dimensions ranging up to 6 feet in diameter.

MONSANTO
CHEMICALS – PLASTICS

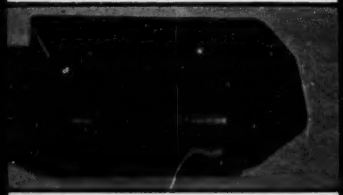
SERVING INDUSTRY
WHICH SERVES MANKIND

Better products made faster with high-strength moldings



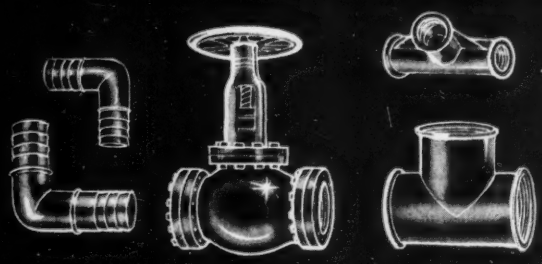
STREAMLINED DESIGN and reduced production costs can be achieved by using "one-shot" moldings instead of multiple fabricated parts. Molded of high-strength Resinox, products have great strength, excellent dimensional stability, are virtually immune to ordinary corrosion. Here, for example, is an Underwriter's Approved electrical outlet that serves as its own insulator box. Installation, as well as production, is simplified. Cable attaches directly (no splicing or taping); outlet fastens to studs with spring clips; single-screw face plate quickly completes installation.

Metal bucket after 1 year's use



Molded bucket after 1 year's use

CONVEYOR BUCKET, smooth, one-piece, lightweight, seamless (patent pending), for grain elevators, feed mills and breweries, stays clean and sanitary, far outlasts metal buckets. Extra safety premium—buckets molded of Resinox are spark and static proof.



OPPORTUNITIES are unlimited for new products requiring high strength, heat and chemical resistance. Pipe fittings, couplings and valves molded of Resinox, for example, could have threads, channels, slots molded-in in a single precision operation; would require no machining, no finishing.

Resinox: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY...
WHICH SERVES MANKIND

Consult Monsanto

Applied chemistry creates new opportunities for you

CHEMISTRY IN MODERN INDUSTRY

If you are exploring new markets, developing new products or improving your process or product, consult Monsanto when your specifications call for chemicals or plastics . . . Write on your company letterhead (or use the coupon) for your copy of this new book: "HOW APPLIED CHEMISTRY CAN HELP YOUR BUSINESS." It suggests dozens of ways in which applied chemistry may help you . . . Address Monsanto Chemical Company, Industrial Counsel Department, St. Louis 4, Missouri.

New book covers the basic reasons why manufacturers should consult a diversified producer of chemicals and plastics to capitalize on the opportunities in new processes and new materials.

Monsanto is a leader in the important areas of product diversification and technological experience in specialized fields.

Monsanto Chemical Company
Industrial Counsel Department U
St. Louis 4, Missouri

Please send copy of
"How Applied Chemistry Can Help Your Business" to—

Name_____ Title_____

Company_____

Street_____ City & Zone_____ State_____

(Ask for individual copies for other executives; list their names and titles.)

MONSANTO
CHEMICALS – PLASTICS

SERVING INDUSTRY
WHICH SERVES MANKIND

"How can I help more people get acquainted with 'U.S. News & World Report'?.."

THAT'S A QUESTION we've been getting from our subscribers ever since "U. S. NEWS & WORLD REPORT" first was published. Nowadays it is being asked more frequently than ever, since there are now 700,000 people buying this magazine—and, it seems, 700,000 people eager to tell their friends about it, anxious to share its reliable and useful news with others.

So here's our answer . . . and many subscribers will recognize that we can claim little credit for originating it. For our answer is the sum of what we have read in many thousands of letters from "U. S. NEWS & WORLD REPORT" readers who already have helped others get acquainted with the magazine.

First suggestion—show your copies to your friends. Tell them about "U. S. NEWS & WORLD REPORT." Recommend it, and recommend that they try it. Many of them will do so, and will thank you for helping them discover this different kind of news magazine.

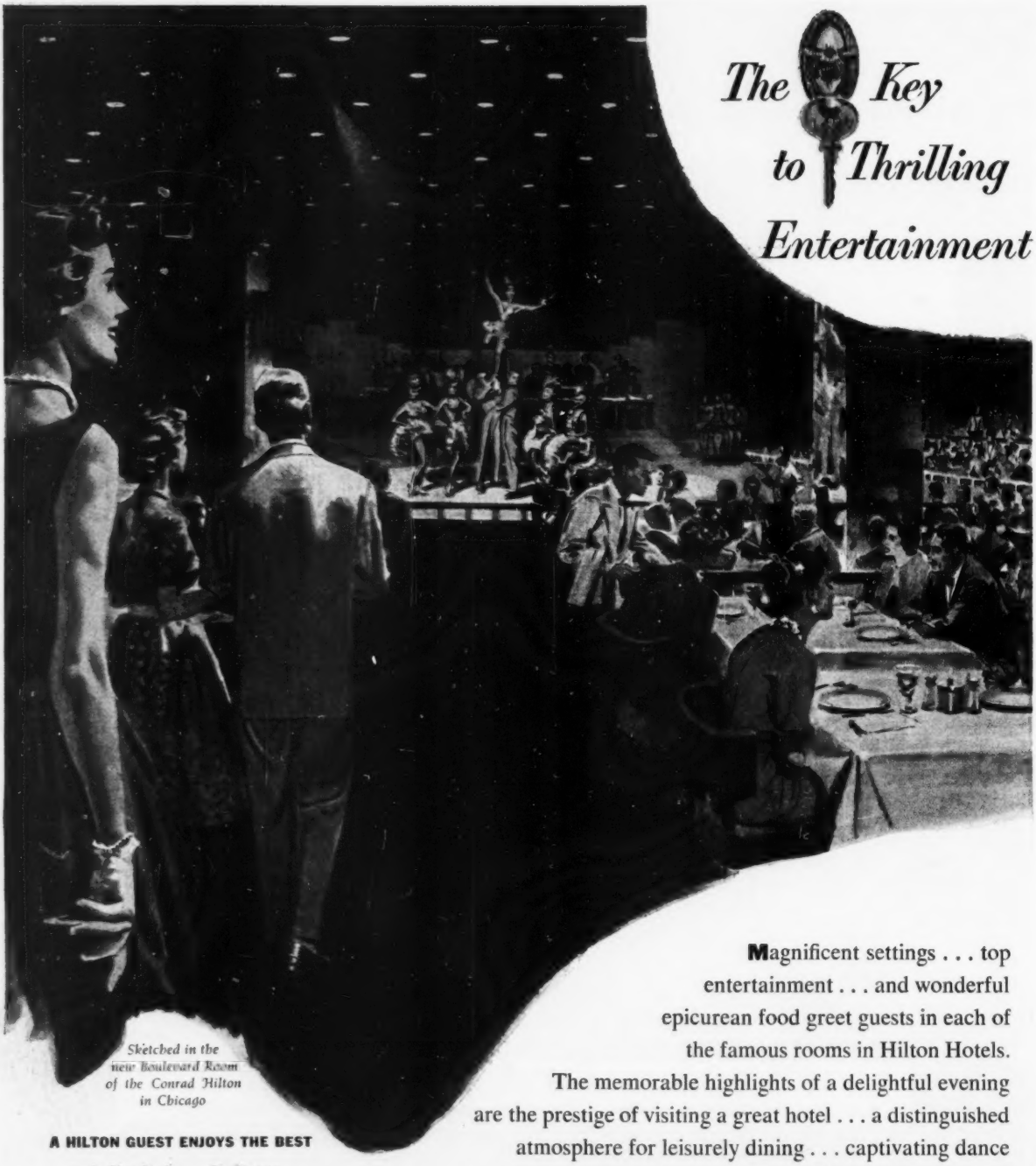
Then, you can ask us to send sample copies. Every reader is in a position to give free copies of any issue to friends and associates. There's a coupon for that purpose in this issue, and in every issue of the magazine. With the copy, each person whose name you send is given the opportunity of subscribing for a trial period at an introductory rate.

"U. S. NEWS & WORLD REPORT" gift subscriptions are another and even more popular way to share this news magazine with others. This is especially true at Christmas when there's the added attraction of armchair shopping via airmail to avoid the crowds. Special gift rates are available to subscribers the year 'round.

Many organizations see to it that their key people get the weekly issues of "U. S. NEWS & WORLD REPORT" by entering subscriptions for them. Special details will be sent you by the Circulation Manager on request.

To all subscribers—our thanks to you for your enthusiasm and high regard for this publication . . . and our pledge for the future to continue to use the fruits of growth to make "U. S. NEWS & WORLD REPORT" an even better news magazine, to put more and more value between the covers of each issue.

ANTHONY R. GOULD
Business Manager
24th & N Streets, N. W.
Washington 7, D. C.



The Key to Thrilling Entertainment

Sketched in the new Boulevard Room of the Conrad Hilton in Chicago

A HILTON GUEST ENJOYS THE BEST

In New York
THE WALDORF-ASTORIA
THE PLAZA
THE ROOSEVELT
THE NEW YORKER

In Washington, D. C.
THE MAYFLOWER

In St. Louis, Mo.
THE JEFFERSON

In Columbus, Ohio
THE DESHLER HILTON

In Fort Worth and El Paso, Texas
THE HILTON HOTEL

In San Bernardino, Cal.
ARROWHEAD SPRINGS

In Chicago
THE CONRAD HILTON
THE PALMER HOUSE

In Los Angeles
THE TOWN HOUSE

In Dayton, Ohio
THE DAYTON BILTMORE

In Albuquerque, New Mexico
THE HILTON HOTEL

In Chihuahua, Mexico
THE PALACIO HILTON

In San Juan, Puerto Rico
THE CARIBE HILTON

In Madrid, Spain
THE CASTELLANA HILTON

In Istanbul, Turkey—THE ISTANBUL HILTON
(Opening early 1955)

Magnificent settings . . . top entertainment . . . and wonderful epicurean food greet guests in each of the famous rooms in Hilton Hotels. The memorable highlights of a delightful evening are the prestige of visiting a great hotel . . . a distinguished atmosphere for leisurely dining . . . captivating dance music to name bands . . . and the brilliant performances of glamorous stars. Ideally located in leading cities around the world, Hilton Hotels are known for their superb cuisine, gracious service and friendly hospitality.

Hilton Hotels
THE WORLD AROUND

Conrad N. Hilton, President

EXECUTIVE OFFICES • THE CONRAD HILTON • CHICAGO 5, ILLINOIS

Trading With Russia— What Argentina Found

A Latin-American country is finding that it's hard to do business with the Russians. Argentina expected big things from the trade agreement she signed with the Soviet Union, but now discovers that Russia is not living up to her promises.

Pact is good for home consumption and has nuisance value toward U. S., however. Argentina is letting it stay on the books.

BUENOS AIRES

Argentina is becoming disillusioned by her attempts to do business with the Russians. A trade agreement with the Soviet Union was supposed to do big things for Argentina and was to serve as the basis for expanded Russian trade in Latin America, but it is not working out that way.

Argentina is finding that Russian deliveries, if they are made at all, usually fall far short of promises. Trade between the two countries is running at less than half the rate of 250 million dollars that Argentine officials predicted.

The deal, made 13 months ago, looks good on paper. In theory, it furnishes an outlet for a big volume of Argentine exports and provides Argentina with items that she wants.

Argentina started shipping exports to the Soviet Union shortly after the agreement took effect. Within a few months she shipped a large part of the products that she had promised. An Argentine Government mission went to Russia to select some of the special items that the Soviets had promised to furnish.

Russian deliveries, which started months later, are proving to be small when compared with Russian promises. Although Argentina has received a few shipments of gasoline and other refined products, only a fraction of the 550,000 short tons of crude petroleum that was promised has been received. Shipments of Russian coal are far below the target of 330,000 tons.

Russia was expected to deliver large amounts of iron and steel products. But Argentina has seen little of the 55,000 short tons of billets, the 22,000 tons of pig iron and the 31,000 tons of steel sheets that were promised. While most of the 66,000 tons of steel rails for streetcar and railway lines have been received, Argentina is still waiting for the 44,000 tons of iron and steel pipe. Promised shipments of special steel for tools and other purposes have not been made.

(Continued on page 86)

—Foto Montana

ARGENTINA HAS PLENTY OF HIDES
. . . but shipments to Reds have been mostly a one-way deal

you save money because it lives up to its long-life reputation

economize with longer-lasting

BYERS WROUGHT IRON PIPE

WRITE DEPT. K FOR BOOKLET "THE ABC'S OF WROUGHT IRON"

A. M. BYERS COMPANY
Pittsburgh 22, Pa.

If you care for your secretary

GIVE HER A NEW Royal CHAIR

A tired steno costs more than a good posture chair. Write for literature on new Royal posture chairs.

metal furniture since '97 Royal

ROYAL METAL MFG. CO.
175 N. Michigan Avenue, Dept. 1290, Chicago 1
In Canada, address Galt, Ontario
Your only single source for over 150 metal furniture items

Department-store goods move in STYLE on the WABASH

AMERICA'S LARGEST FREIGHT FORWARDERS RELY ON THE WABASH RAILROAD

Fast freight methods are a *necessity* for today's style-conscious department-store owners! How do they manage to keep an up-to-the-minute stock on their counters—no matter how far they are from their sources of supply?

Very often, their shipments are numbered among the many kinds of high-class freight moved on the Wabash Railroad's "Merchandise" trains. The goods are assembled by experienced freight forwarders—top traffic men who have the demanding job of putting together many less-than-carload lots . . . and getting them on the rails *fast* in easy-to-handle carload shipments.

Wabash assures the forwarders of quick delivery. The tonnage on our "Merchandise" trains is deliberately held down to permit swift movement—*on a very rigid schedule.*

As a result, the Wabash is second among all railroads — regardless of size — in tonnage handled for America's freight forwarders. Forwarders *know* merchandise . . . and they know the value of speed and reliability in shipping it. Your Wabash representative can tell you why so many of them agree: *"You're on the Right Road . . . when you ship Wabash!"*

P. A. Spiegelberg
Freight Traffic Mgr.
St. Louis 1, Mo.

ROAD OF THE MEN WHO MOVE THE GOODS

Even more disappointing to Argentina is the way Russia is falling down on promises to finance and deliver capital equipment. Argentina wants large amounts of farm machinery to modernize her agriculture. New equipment is needed to improve the railways. Generators and transmission equipment are required to relieve the power shortage.

Most serious of all is the shortage of oil-field equipment. The Government wants to expand this industry, and the Russians were supposed to furnish equipment to help do the job.

In all, Russia promised to finance and furnish 30 million dollars' worth of these capital goods. But the Russians have not offered satisfactory financing, and none of the equipment has been shipped.

Since Russia is falling down so badly on shipments, there is speculation as to how long the agreement will stay in force. Its terms provide that it is to stay in effect from year to year unless one side or the other gives a 90-day notice of cancellation. Some Argentines, knowing the inside facts, were a little surprised when their Government did not serve notice this year. Many officials believe, however, that Argentina can gain by continuing the agreement.

For one thing, it fits in with Argentina's drive for overseas markets. Every few weeks the Government makes a new trade agreement. Some of these are with non-Communist countries, and others are with Communist nations; an agreement with East Germany has just been signed. Grain, linseed oil and hides are not as easy to sell as they were right after World War II.

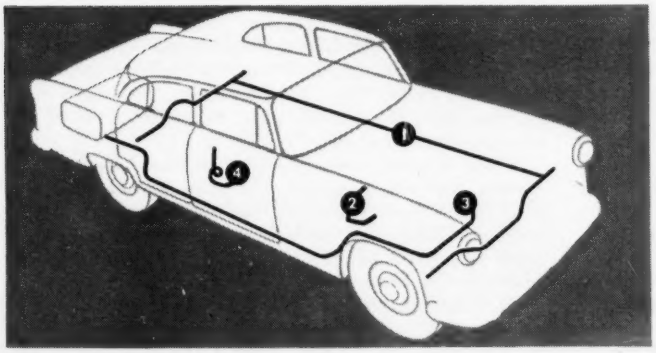
Then, too, the Government likes to have the public feel that big deals are being carried out. Most people here know the deal with Russia was supposed to be a bonanza, and they have not learned how it is falling short.

Even more important, as some observers here see it, is the idea that having a deal with Russia on the books, even if it is not working out well, strengthens Argentina's bargaining position with the United States.

Now there is fear in Argentina that the U. S. Government will dump the big stocks of farm commodities that it has built up under the price-support program. Those products, if sold abroad at sacrifice prices, could put a crimp in Argentina's export business. Argentines believe that doing business with Russia will keep the U. S. uneasy and may help to head off American dumping.

The agreement with Russia, thus, is to continue in effect for at least another year. Argentines who know the inside story, however, are becoming more and more disillusioned by Russia's broken promises.

Has he wobbled his last step, or will your brakes work?



Chances are good that he will reach his mother's side safely. One sound reason: your hydraulic brake lines are made of Bundyweld Tubing.

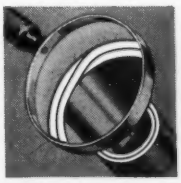
The manufacturer of your car works tirelessly to make it as safe as possible for today's high-speed driving. That's why he specifies Bundyweld for vital tubing lifelines. Bundyweld is leakproof, almost immune to vibration fatigue, and *15 times stronger than necessary to protect your life.*

1 ***Dependable*** **brake lines—*one reason Bundyweld is used in 95% of today's cars, averaging 20 applications each.***

2 Oil stays where it belongs when oil lines are made of leakproof Bundyweld. No costly repairs or ruined engine.

3 Gasoline lines take heavy punishment from flying stones, constant vibration. Bundyweld helps keep them leakproof.

4 Push-button windows must be foolproof. That's why auto makers use Bundyweld to conduct the hydraulic fluid.



Made by the world's largest producer of small-diameter tubing, Bundyweld Steel Tubing is the only tubing double-walled from a single metal strip, copper-bonded through 360° of wall contact.

BUNDYWELD TUBING®

"The lifelines of your car"

BUNDY TUBING COMPANY • DETROIT 14, MICHIGAN

HYDROGEN BOMB:

HOW THE U. S. ALMOST LOST IT

[Continued from page 72]

refreshing on the technical aspects of the problem. They left San Francisco by plane at seven thirty that evening.

They arrived at Albuquerque at 3:00 A.M. and spent the remainder of the night at the Hilton Hotel. The following morning, they boarded the CARCO Airline, the small connecting airline to Los Alamos, and soon were talking with Teller. Teller informed Lawrence and Alvarez that the project had a good chance of success, provided a supply of tritium could be made available. Machine calculations would have to be made to check the thermodynamics. Before leaving Los Alamos that evening, Lawrence received assurance from Teller that Los Alamos and Princeton would begin the machine calculations immediately.

That evening, Teller, Lawrence, and Alvarez flew back to Albuquerque and talked in their room at the Hilton until bedtime. The three men agreed that a mass meeting of top U. S. physicists ought to be called at Los Alamos immediately to discuss the thermonuclear bomb. Before going to bed, Teller suggested that a heavy-water pile, such as the Canadian pile at Chalk River, might provide an easy way to obtain a good supply of neutrons (it would produce more neutrons than the ordinary graphite piles)—required for making the necessary tritium. Lawrence replied that he would get going on that at once. Then Lawrence and Alvarez left Albuquerque at 3:30 A.M. for Washington. . . .

On the afternoon of October 8, Lawrence and Alvarez arrived in Washington and went directly to the Atomic Energy Commission. Bursting with enthusiasm and their plan to build heavy-water piles to secure extra neutrons, they went to see Dr. Dean Kenneth Pitzer, Director of Research, and Major General James MacCormack, head of the Military Applications Division of the AEC. Later they joined with their colleague, Wendell Latimer, who had already contacted Drs. Harold C. Urey and Willard F. Libby in Chicago, and went to see Pitzer's administrative assistant, Dr. Paul Fine. The three men received enthusiastic support everywhere but in the office of Paul Fine. Alvarez simply put him down as a person with essentially no imagination and discounted him.

Bright and early the following day, Alvarez and Lawrence had breakfast with Robert LeBaron, who was an assistant to the Secretary of Defense for atomic matters. They outlined their plan for obtaining more neutrons. LeBaron seemed enthusiastic.

The following morning, Monday, October 10, the two scientists went back to the Atomic Energy Commission to arrange clearance into the Canadian heavy-water pile at Chalk River. They found all of the Commission except Strauss lukewarm and unhappy about their proposed trip to Chalk River. Strauss showed Lawrence and Alvarez his October 5 memorandum. It soon became apparent to Lawrence and Company that the AEC was not enthusiastic about a thermonuclear program.

From Lewis Strauss, Lawrence and Alvarez learned that the greatest hope of action on an H-bomb program lay in the powerful Joint Congressional Committee, Chairman Brien McMahon, and ranking minority member Hickenlooper. McMahon, Strauss reported, had already entered the struggle on the side of the hydrogen-bomb program and had designated one of his special staff assistants to carry the fight for the Joint Committee. When McMahon had first read Strauss's memorandum, Lawrence later learned, he had turned to his trusted staff assistant, William Liscum Borden, who was also executive director of the Joint Committee, and said:

"Bill, we're going all out on the H-bomb and nothing is to stand in the way."

Borden was just twenty-eight. The story of how he had, at this young age, become one of a small group of men on whom the nation's weight in the world power struggle would depend began one black night in November, 1944. Borden was flying a light, stripped-down B-24 Liberator over the Channel toward the English coast. He had just dropped a supply of explosives to allied underground agents in France. Suddenly the cockpit glowed with a crimson glare. "I thought the flash must have come from a gasoline explosion in the plane." Then Borden and his crew knew they had been passed by a German V-2 rocket on its way to London. "Our plane seemed to stand still," he said later.

Borden never got out of his mind the speed of the rocket as compared with the wallowing pace of his Liberator. He returned to Yale after the war to finish his law course. Before he could settle down to practice, however, he wrote a book on the effect of atomic weapons and rocket delivery on military strategy and the world balance of power. *The Revolution in Strategy* Borden titled it. His publishers called it *There Will Be No Time*. The book was the first to advocate atomic weapons by the thousands for tactical use against military bases. It caught the attention of Brien McMahon and other members of the Joint Committee. McMahon brought Borden to Washington.

When Borden learned that Lawrence and Alvarez were in Washington advocating a "crash" hydrogen-bomb program, he quietly arranged a lunch for the two scientists, Joint Committee Chairman Brien McMahon, himself, and one other H-bomb advocate, committee member Representative Carl Hinshaw.

It was a memorable lunch.* Lawrence, fresh from Los Alamos, was well prepared. The main line of his argument was: The U. S. must assume that the Soviets are building a hydrogen bomb along with their development of the atomic bomb and that it may be a question of only a few weeks or months before the Soviets explode such a bomb.

To hedge against this possibility, Lawrence argued, the U. S. must initiate immediately a hydrogen-bomb program on the size and scale of effort of the Manhattan District during World War II. "It would be disastrous," Lawrence said, "if the Soviets produced a hydrogen bomb before the U. S."

Lawrence told his luncheon companions that the U. S. should begin immediately to stockpile critical materials needed in the hydrogen bomb. He presented plans for a vast neutron-production expansion program that could be put into operation in order to store up critical materials against the day the hydrogen bomb was a success. Lawrence told McMahon he was ready to go to Canada to persuade the Canadians to convert their Chalk River reactor to the production of critical materials.

Said Lawrence, in a cry that later became famous among

*Later Lawrence and Alvarez were criticized for attending the luncheon by AEC bureaucrats who charged that the scientists had "gone over the head of AEC to Congress" in order to lobby for the H-bomb.

the advocates of the hydrogen bomb and the expansion program: "I want to see a gram of neutrons a day."

At this lunch, McMahon, Hinshaw, and Borden became aware for the first time of the stature of Dr. Edward Teller in the field of thermonuclear research.

Lawrence assured the Committee that, in spite of what other scientists would say against it, the hydrogen bomb was an attainable goal, and Edward Teller was the man who could, and would, drive it through to completion.

McMahon told Lawrence he would come to Berkeley within ten days to discuss plans. Said he: "We hope you can get something going." McMahon told the scientists that if anything held them up, they were to be sure to call him.

That afternoon, Alvarez and Lawrence went back to the Atomic Energy Commission to keep an appointment with the Chairman, David Lilienthal. The physicists were stunned by his attitude. Lilienthal did not appear to want to discuss the program. He turned his back on the scientists and stared out the window. Within a few minutes, unable to make any headway, Lawrence and Alvarez left the room.

In New York the following day, Lawrence and Alvarez found they were unable to get seats on a plane to Ottawa. Meantime, they called physicist I. I. Rabi at Columbia and arranged an appointment to discuss the superbomb with him. Rabi was worried about the Soviet advances in the field of atomic weapons. When he discovered Lawrence and Alvarez were intent on starting a thermonuclear program, he said: "It is certainly good to see the first team back in. You fellows have been playing with your cyclotron and nuclei for four years, and it is certainly time you got back to work, and I'm awfully happy to see you back in the business." Lawrence went on alone to Ottawa next day.

Several days later, Alvarez and Lawrence arrived back on the West Coast completing their whirlwind trip with the feeling the Canadians would be co-operative. They did not stop to rest. They immediately called a conference to discuss possible locations for the heavy-water reactors. Lawrence Hafstad, head of the Reactors Division of the Atomic Energy Commission, came from Washington to lend advice. Dr. Robert Christie, a physicist from California Institute of Technology who did the theoretical design work on the Nagasaki bomb (called the "Christie Gadget"), and Dr. David Griggs, a geophysicist from the University of California at Los Angeles, also attended the meeting.

* * *

Meantime at Los Alamos, Teller found it difficult to keep his shirt where Oppenheimer had suggested. "I was quite prepared to contribute mostly in the direction of the fission weapons. When I returned from this short trip abroad and was very much disturbed about the Russian bomb, I was looking around for ways in which we could . . . speed up our work. . . . Only after several weeks of discussion did I come to the conclusion that no matter what the odds seemed to be, we must at this time—I, at least—must at this time put my full attention to the thermonuclear program. I also felt this was much too big an undertaking and I was just very scared of it. I was looking around for some of the old crew to come out and participate in this work."

Teller thought of Hans Bethe, who in the Los Alamos days had become a close friend. He went to Ithaca, New York, where Bethe was head of the Physics Department at Cornell University, and after a "somewhat strenuous discussion," Teller believed he had enlisted the eminent scientist. In the middle of the discussion Oppenheimer called and invited the two physicists down to Princeton to discuss the hydrogen bomb. They called at his office at the Institute for Advanced Study.

When they walked in, Oppenheimer picked up a letter from his desk. It was from Dr. Conant, a fellow member of the GAC and President of Harvard University. The letter said, as Teller recalls it, that such a weapon would be built "over my dead body." (Later Conant became famous for saying that, if necessary, he would "stump the country" against building the H-bomb.)

Oppenheimer did not speak out specifically against the H-bomb while Teller was present. But he recalled the anonymity, the secrecy, and the unpleasantness of the wartime days at Los Alamos.

Before the two scientists had entered Oppenheimer's office, Teller had said: "We are going to talk to Oppenheimer now, and after that you will not come."

When they departed, Bethe turned to Teller and smiled: "You see you can be quite satisfied. I am still coming." They had even discussed Bethe's salary.

Learning that Teller was attempting to enlist Bethe for the thermonuclear program, AEC Commissioner Strauss also talked with him. Bethe explained to Strauss that he was troubled by Teller's offer, since he had already spent long years on the unremunerative government payroll. A return to Los Alamos would be extremely costly to Bethe at a time when his family responsibilities were heavy. Strauss well understood the problem since he had seen many men penalized financially by government service and was prepared to agree that Bethe had already done more than his share of sacrificing. A man of independent means, Strauss asked if Bethe would permit him to pay the difference between his government salary at Los Alamos and his salary as a department head at Cornell University. Bethe seemed moved by the offer.

For the Joint Congressional Committee back in Washington, the enthusiasm and concrete proposals that Lawrence and Alvarez presented came in sharp contrast to the evasive testimony that had been heard from AEC and Defense officials during secret sessions in early October. Try as he might, McMahon had been unable to elicit any discernible enthusiasm for the program either from the Oppenheimer-dominated AEC or from the Department of Defense. The military continued to profess confused skepticism about "Joe One," and seemed only vaguely aware of the meaning of the hydrogen bomb.

Late in the afternoon after the Lawrence lunch, Brien McMahon closeted himself in his office with Borden and drafted a one-page letter to AEC Chairman David Lilienthal. The letter stated simply that the U.S. could not afford to stand idly aside and risk the chance that the Soviets were pushing toward the development of an H-bomb. McMahon urged that the Commission embark the U.S. on a "crash" program to build the hydrogen bomb immediately.

The following day McMahon appointed a special subcommittee of the Joint Committee and charged it with the responsibility for making a study of the H-bomb program. The members of the subcommittee were: Representative Henry M. (Scoop) Jackson, an advocate of preparedness; Carl Hinshaw; Chet Holifield; and Melvin Price. McMahon's own staff assistant Bill Borden was assigned to provide advice and assistance to the subcommittee. The subcommittee set out immediately for Los Alamos.

Having in the meantime received no word from Lilienthal in answer to his letter urging a "crash" H-bomb program, McMahon went to the White House. When he raised the question of proceeding with a crash program, President Truman was evasive and replied that the matter had not yet come across his desk for consideration.

McMahon went back to his office and composed a letter to Truman. If the President decided against the hydrogen bomb, would he please notify McMahon before making the

decision known? McMahon wanted one last try at changing Harry Truman's mind. Several days later, Truman replied, agreeing to notify McMahon first if he ruled against the hydrogen-bomb program.

The special H-bomb subcommittee meantime had arrived at Los Alamos and conferred with the Director of the Weapons Laboratory, Dr. Bradbury. At this time, Bradbury seemed to be in favor of the hydrogen-bomb program. He gave what one Congressman later described as "a wonderful briefing." Bradbury told the subcommittee that a meeting was scheduled for November 7, the following week, that would convene all the leading physicists of the country at the laboratory for a full-dress discussion on the best way of proceeding with the hydrogen bomb.

Los Alamos was so convincing in its arguments for the H-bomb that after only two days there, Borden and Jackson called McMahon on the telephone to report that the subcommittee was in full agreement. Jackson urged that McMahon call a special meeting of the full Joint Committee in order that a unanimous declaration in favor of the program could be secured and presented to the President. McMahon readily agreed and suggested that the meeting be convened in Chicago.

The advocates of the H-bomb were in motion. And, it developed, so were the opponents.

Teller's suspicions about Oppenheimer's opposition were not unfounded. To Harvard's President and fellow GAC member James B. Conant, Oppenheimer wrote a letter at this very time. It may prove to be one of the few examples on record of Oppenheimer unguarded. It is a remarkable document:

Dear Uncle Jim,

We are exploring the possibilities for our talk with the President on October 30. . . . On the technical side, as far as I can tell, the super is not very different from what it was when we first spoke of it more than seven years ago: a weapon of unknown design, cost, deliverability, and military value. But a very great change has taken place in the climate of opinion. On the one hand, two experienced promoters have been at work, i.e., Ernest Lawrence and Edward Teller. The project has long been dear to Teller's heart, and Ernest has convinced himself that we must learn from Operation Joe ["Joe One"] that the Russians will soon do the super, and that we had better beat them to it.

On the technical side, he proposes to get some neutron-producing heavy-water reactors built and to this, for a variety of reasons, I think we must say amen. . . . But the real development has not been of a technical nature. Ernest spoke to Knowland [the Senator from California] and McMahon and to some, at least, of the joint chiefs. The Joint Congressional Committee, having tried something tangible to chew on ever since September 23, has at last found its answer. We must have a super, and we must have it fast A subcommittee is heading west to investigate this problem at Los Alamos, and in Berkeley. The joint chiefs appear informally to have decided to give the development of the super overriding priority, though no formal request has come through. The climate of opinion among the competent physicists also shows signs of shifting. Bethe, for instance, is seriously considering return on a fulltime basis; and so surely are some others. I have had long talks with Bradbury and Manley, and with Von Neumann, Bethe, Teller, MacCormack, and LeBaron, all are scheduled to turn up within the next thirty-six hours. I have agreed that if there is a conference on the super program at Los Alamos, I will make it my business to attend.

What concerns me is really not the technical program. I am not sure the miserable thing will work, nor that it can be gotten to a target except by oxcart. It seems likely to me even further to worsen the unbalance of our war plans. What does worry me is that this thing appears to have caught the imagination, both of the Congressional and military people, as the answer to the problem posed by the Russians' advance. *It would be folly to oppose the exploration of this weapon.** We have always known it had to be done; and it does have to be done, though it appears to be singularly proof against any form of experimental approach. But that we become committed to it as the way to save the country and the peace appears to me full of dangers.

We will be faced with all this at our meeting; and anything we do or do not say to the President will have to take it into consideration. I shall feel far more secure if you have had an opportunity to think about it.

*Italics are the Authors'.

We All Hope

THE OCTOBER 5 memorandum Lewis Strauss addressed to Lilienthal contained the request that the AEC's General Advisory Committee rule on the question of the superbomb in its late October meeting.

Strauss was determined to fight for a quick AEC decision. Before he enlisted the aid of Brien McMahon, Hickenlooper, and the Joint Committee, Strauss first wanted the AEC position clearly stated.

The Chairman of the General Advisory Committee, Dr. J. Robert Oppenheimer, convened the Committee, as requested, on October 29, 1949, at the marble-façade headquarters of the AEC, 1901 Constitution Avenue, Washington, D. C.

Eight of the nine members of the GAC gathered for the meeting. The one absent member, Dr. Glenn T. Seaborg, a chemist from the University of California, was away in Europe. Before he left the U. S., Seaborg addressed a letter to GAC Chairman Oppenheimer supporting the superbomb. Its existence was not disclosed to the other scientists on the GAC or to the members of the Atomic Energy Commission.

Seaborg wrote:

Although I deplore the prospects of our country putting a tremendous effort into this, I must confess that I have been unable to come to the conclusion that we should not. Some people are thinking of a time scale of the order of three to five years which may, of course, be practically impossible and would surely involve an effort of greater magnitude than that of the Manhattan project. My present feeling would perhaps best be summarized by saying that I would have to hear some good arguments before I could take on sufficient courage to recommend not going toward such a program.

The other members of GAC were:

1) J. Robert Oppenheimer, Chairman.
2) James B. Conant, President of Harvard.
3) Lee A. DuBridge, President of the California Institute of Technology.
4) Enrico Fermi, University of Chicago Institute for Nuclear Studies.

5) I. I. Rabi, a physicist from Columbia University.

6) Hartley Rowe, Vice-President and Chief Engineer, United Fruit Company.

7) Oliver E. Buckley, President of Bell Telephone Laboratories.

8) Cyril S. Smith, Director, Institute for Study of Metals, University of Chicago.

The General Advisory Committee session lasted one full day. *The Committee concluded that the U. S. ought not to proceed with a large-scale hydrogen-bomb program such as that advocated by Strauss, McMahon, Lawrence, and Teller.* Dr. Oppenheimer expressed the opinion in writing that "the superbomb should never be produced." . . .

Concluded the GAC report:

> We all hope that by one means or another, the development of these weapons can be avoided. We are all reluctant to see the United States take the initiative in precipitating this development. We are all agreed that it would be wrong at the present moment to commit ourselves to all-out efforts towards its development.

During the course of the one-day meeting, the General Advisory Committee invited the Chairman of the Joint Chiefs of Staff, General Omar Nelson Bradley, to present the military case for the hydrogen bomb. Like most people in the Defense Department, Bradley had only vague conceptions of the hydrogen bomb and its possible military use against an enemy. He argued basically that the U. S. could not afford to be less well armed than its potential enemies. His arguments were sound, but he was not able to back them up with facts and figures or technical arguments. The brilliance and intensity of Oppenheimer and his associates overwhelmed "old schoolmaster" Bradley. The military's case for the H-bomb was thoroughly drubbed.

* * *

The decision of the GAC members present was unanimously against proceeding with the H-bomb. However, two of the Committee members, Fermi and Rabi, qualified their votes in a minority report. They suggested that the U. S. try once more to get the Russians to agree to a positive system of international control of atomic and superatomic weapons. Only if unsuccessful in this last try, Fermi and Rabi said, should the U. S. proceed with the construction of the hydrogen bomb.

* * *

While Strauss and McMahon had expected to lose the showdown, they hadn't expected the vote to be so heavily against them. When they learned of it, they literally were stunned. McMahon communicated word to Teller, saying: "Edward, I have a terrible report from the General Advisory Committee."

McMahon urged Teller to fly east immediately to help the proponents of the hydrogen bomb meet the statistically powerful technical arguments of the nearly unanimous GAC. Teller agreed and hurried to Albuquerque to take a plane east. He went via Chicago, stopped briefly to try to persuade his old friend GAC member Fermi to support the H-bomb. Fermi was cool, refused to tell Teller of the contents of the GAC report. While he was in Fermi's office, Dr. John Manley, Associate Director of Los Alamos (and as such, Teller's boss) and Secretary of the GAC, telephoned him. Manley was in Washington.

He insisted that Teller drop his plan to see McMahon. Teller asked his reason, and Manley replied that it was important that the scientists maintain a united front against the H-bomb. It would be unfortunate, Manley argued, if the powerful Senate Chairman got the impression there was a division of opinion among the scientists. He insisted that Teller should not come to Washington.

"I am willing to call Senator McMahon," said Teller, "and tell him that I have been asked not to see him and for that reason I would not see him."

"All right," snapped Manley, "you better go and see him."

But when Teller arrived at Washington's Union Station, Manley met him at the train. "I think you sold me a gold brick," Teller recalls that Manley told him. Unfamiliar with U. S. slang, the Hungarian-born physicist had to inquire the meaning of the term before he realized that Manley was attacking the validity of his concept of a thermonuclear bomb. At Los Alamos, Teller had had Manley persuaded.

On their way to downtown Washington, Manley told Teller the General Advisory Committee had a much better answer to "Joe One" than Teller's hydrogen bomb. He refused to say what it was. Teller was mystified.

Teller refused to be turned aside by Manley's pressure. He went later in the day to McMahon's office in the Senate wing of the main Capitol Building. "He did not tell me what was in the report of the GAC, but he used some very strong words in connection with it," Teller recalled later.

McMahon decided to go immediately to Los Alamos to talk with Director Bradbury, whom his subcommittee members had earlier reported as favoring the H-bomb. News of the GAC report preceded him to the laboratory. When he arrived, he learned that Bradbury was now far from enthusiastic about the thermonuclear program. The scheduled meeting of the nation's top scientists to discuss ways and means for going ahead had been canceled.

The top scientists were dropping the H-bomb as though it was a piece of live hardware ready to explode. Rabi, who a few weeks earlier had expressed enthusiasm to Lawrence and Alvarez, had already voted with Oppenheimer and against the bomb in the GAC. At almost the same time, Teller had occasion to call Hans Bethe in New York. He had last seen Bethe outside Oppenheimer's office in Princeton, where Bethe had smilingly reassured him of his decision to come to Los Alamos. Bethe had changed his mind. He would not come.

At Berkeley, Lawrence learned from Alvarez that Dr. Serber, who had been selected as their chief theoretical adviser and who had gone to Princeton to convert Oppenheimer, was himself converted. A blank wall had been erected against the H-bomb. Lawrence and Alvarez canceled their elaborate plans for a heavy-water reactor at Suisun Bay.

Counterattack

THE VOTE OF THE General Advisory Committee and the Atomic Energy Commission did not end the contest. Lewis Strauss, the traditional dissenter, turned to his traditional ally, the Department of Defense. An old friend from the Forrestal days, Assistant Secretary of Defense Marx Leva, arranged a meeting between Strauss and Secretary of Defense Louis Johnson.

Eager to get to the point, Strauss said abruptly as he entered Johnson's office: "Mr. Secretary, isn't it an American tradition that we will never accept the idea that we will be less armed than our enemies?"

Johnson, a former American Legion Commander, agreed. Strauss continued: "The AEC has just voted to reverse that tradition."

The discussion began in late afternoon, and the two men sat in the Secretary's office until after nightfall, when the

Pentagon was virtually deserted. Strauss was not able completely to convince Johnson that the Soviet explosion, "Joe One," was an actual bomb, but he was able to get Johnson to agree that the U. S. could not wisely believe otherwise. Strauss pointed out that two months had passed since "Joe One," and the U. S. had done nothing. Finally, Strauss made Johnson see the need for proceeding with an all-out hydrogen-bomb program.

Next morning, Johnson called in the Undersecretary of Defense, the late Steve Early; General Omar Bradley, who only a few days earlier had attended the General Advisory Committee meeting; Major General James Burns, special adviser; and Robert LeBaron, Chairman of the Military Liaison Committee with the AEC.

After the group had gathered in his pale-blue, third-floor Pentagon office, Johnson announced dramatically that there was every reason to believe that the Russians were building an H-bomb, that the U. S. was being sold down the river, and that the U. S. *must proceed with an H-bomb program.* Undersecretary Early readily agreed. One officer in the room said he was not convinced that the H-bomb was practical. "The Air Force already has a bomb powerful enough to blow Moscow off the map. Why waste money on the H-bomb?"

Major General Burns replied quietly: "It's a fundamental law of defense that you always have to use the most powerful weapons you can produce."

Johnson next talked privately with the late Dr. Karl Compton, Chairman of the Defense Department Research and Development Board. He explained that the biggest obstacle to the H-bomb program seemed to be the wall of opposition created by the scientists. Dr. Compton said he was sure that he could find several high-ranking atomic scientists who would testify that the H-bomb was a practical project.

In order to get the Defense Department view clearly and emphatically on the record, Louis Johnson told his special assistant for atomic matters, Robert LeBaron, to prepare an evaluation of the H-bomb as a potential weapon. The report concluded that the bomb was definitely needed for use against certain specific targets, including those on the battlefield. The paper strongly urged an all-out crash H-bomb program, such as Lawrence, Strauss, McMahon, and Teller advocated.

Meantime, Strauss had been talking with AEC Commissioner Gordon Dean. So had Brien McMahon, Dean's former law partner. Gradually, Dean, the newest Commission member, began to question the reasons for his own opposition.

* * *

Eventually, President Truman could no longer avoid facing the H-bomb issue. Brien McMahon and Louis Johnson were bringing hard pressure to bear from two quarters. His special atomic adviser, Robert Oppenheimer, was exerting opposing pressure. Truman called the Atomic Energy Commission to the White House and polled the members. The President then said he would like their views in writing.

On November 9, a single over-all letter was sent from the five Commissioners to the President. With it was enclosed a copy of the General Advisory Committee report, signed by J. Robert Oppenheimer, Chairman. . . .

The positions of the Commissioners on November 9 were as follows: Lilienthal and Pike were definitely opposed to the H-bomb program. Smyth straddled the fence. He thought the U. S. should delay any decision on the H-bomb until it had made another quick try at reaching some kind of agreement with the Russians. Failing that—and Smyth urged that the try be made quickly and negotiations not allowed to drag—then the U.S. should decide whether to go ahead and make the H-bomb. Gordon Dean, now almost a complete convert to the Lawrence-Strauss-McMahon-Teller viewpoint, urged that the U. S. initiate a "crash" H-bomb program (but he also said that the government should try to arrive at some kind of agreement with the Russians).

Strauss and Pike were both away from Washington on November 9, and consequently each wrote the President separately later that month, expanding on their one-paragraph views in the letter to Truman. Pike's letter was written November 30, and it followed closely the anti-H-bomb position set forth by Commission Chairman Lilienthal.

Strauss's views were:

> Whether it wishes or not, the U. S. must stay in front in the arms race until there is practical world security. Because it saps our strength, the most dangerous idea is to believe our enemies will retire from the arms race, if we do.
>
> We cannot expect the USSR to be persuaded by, or even give considerations to, moral arguments against creating an H-bomb.
>
> The Russians, from our best intelligence, are capable of making a hydrogen bomb; they have the scientists and the equipment. We cannot afford to be less armed than they.

The Commission in its November 9 communication to the President stood three (Lilienthal, Pike, Smyth*) to two (Strauss, Dean) *against* proceeding with the super.

The split decision troubled Harry Truman. He felt "more study" was needed. Accordingly, on November 19, he appointed a special three-man subcommittee of the National Security Council and asked it to study and make recommendations on H-bomb policy. The members of the subcommittee were Secretary of State Acheson, Secretary of Defense Johnson, and AEC Chairman Lilienthal.

After the series of AEC votes against the H-bomb program, Lewis Strauss was about to give up the fight. Three months had passed since the Russians had proved they could make an A-bomb; two months had gone by since Strauss first urged the all-out H-bomb program. Nothing had happened. Strauss assumed he was all but beaten.

He made up his mind to resign from the Commission. When Pentagon ally Louis Johnson heard that he intended to leave the AEC, he went to Harry Truman to ask if he could appoint Strauss Secretary of the Navy. Truman, who had not heard of Strauss's intention to leave, categorically refused. He would not consider Strauss's resignation from the AEC. Truman called Strauss "indispensable."

Strauss was frankly concerned over the fact that so many people disagreed with his views on the H-bomb program. He began to think his own judgment might be faulty. On this all-important question, he was practically alone. He felt that if his judgment was wrong on this—and he had been outvoted every time—it was also probably wrong on other matters.

Just before Christmas, 1949, Lewis Strauss, deeply depressed, disappeared from sight in Washington and went to the Beverly Hills Hotel, in Beverly Hills, California, to be by himself and think. He picked this unlikely spot for his Gethsemane because his mother-in-law had offered him a cottage that she maintained there. Quietly and silently, Lewis Strauss began a careful and sweeping reappraisal of his own ideas.

On the fifth day the telephone rang. It was Brien Mc-

*Smyth now believes that the following month, when assured by Secretary of State Dean Acheson that any negotiations with the Russians were futile, he switched and became a proponent of the H-bomb.

Mahon. Strauss remarked on the loudness and clarity of his voice and wondered where he was calling from. "I'm calling from the lobby, and I want to see you and tell you that you are right," said McMahon. When the two men met face to face, Strauss told McMahon that he had reached the same conclusion. That night, Strauss headed back to Washington, and the Atomic Energy Commission on Constitution Avenue, for one more try at pushing the H-bomb program through.

McMahon had been staying at the Beverly Hills Hotel, and with staff director Bill Borden's help, he composed a five-thousand-word letter to President Truman. In this letter, McMahon stated that the U. S. could no longer allow the decision on whether to build the hydrogen bomb to drag on. McMahon recounted all the argument against the program, demolishing each one. He wrote that the very survival of the United States might well depend upon the speed with which the hydrogen bomb was achieved. McMahon told Truman that there was no lack of targets in the Soviet Union, that airfields of the Russian Strategic Air Command could best be destroyed by the superbombs.

McMahon sent the letter to Washington via Bill Borden.

• • •

The President Decides

SEVERAL MORE WEEKS of indecision passed. Then Washington received a piece of news that struck with greater force than the word of "Joe One." On January 27, 1950, Dr. Emil Julius Klaus Fuchs, formerly group leader at Los Alamos Atomic Weapons Laboratory, and then head of the Theoretical Physics Division at the main British atomic energy establishment at Harwell, confessed to British Agent William James Skardon that he had engaged in espionage, including the passing of atomic secrets to the Soviet Union, through the period 1942 to 1949.

As a small circle of official Washington shuddered at this news, the General Advisory Committee was ordered to meet in Washington on January 30, to ascertain, as nearly as possible, how much information Fuchs could have given to the Soviet Union. By the end of the meeting it was clear that Fuchs had been in a position to be of enormous aid to the Russians. He was intimately acquainted with the techniques of making atomic bombs. He had knowledge of "improved" atomic bombs. He had worked on the manufacturing processes at the gaseous-diffusion isotope-separation plant at Oak Ridge. He knew the U. S. position with respect to the hydrogen bomb as it existed in June, 1946, because he had not only attended the Los Alamos seminars but had been a leading participant.

When the GAC submitted its report, the President called Secretary of Defense Louis Johnson and asked him to convene the special H-bomb subcommittee of the National Security Council the following day. Truman wanted a decision at once on the U. S.'s own H-bomb program.

The committee met the following morning, January 31, in a conference room on the second floor of the old War-Navy-State building, across from the White House. The conference room was large and bare, painted a dingy brownish yellow to hide dirt. This was the first time the committee had ever convened.

In the middle of the room stood a long conference table. A dozen men—the members and their aides—took seats around it: Louis Johnson, with his atomic assistant, Robert LeBaron; Lilienthal, who brought along Commissioner Henry Smyth and the AEC General Counsel Joseph Volpe; Acheson and his adviser, R. Gordon Arneson; plus Rear Admiral Sidney Souers, the secretary of the National Security Council, and his assistant, James Lay; and others. . . .

They voted—Acheson and Johnson together for the H-bomb program; Lilienthal against. Johnson and Acheson each brought drafts of what they thought the President should say. Lilienthal had no draft of anything, except a half-hour speech, which he proceeded to give. He was morally against the H-bomb and kept saying over and over that he had a "visceral feeling this is wrong."

There was little argument—just the impassioned oratory of Lilienthal, and the hard, cold vote—two for, one against. There was a brief discussion over which draft ought to be used—State's or Defense's. But the group quickly settled on Johnson's because it did not "apologize to the world" for what the U. S. had decided to do. After the meeting broke up, the statement was taken across the street to the White House.

In the White House, President Harry Truman hesitated momentarily. Rear Admiral Souers, who had brought the decision and the draft, spoke quietly to the President: "I don't think you have a choice. It's either we make it or wait until the Russians drop one on us without warning."

That afternoon, Truman announced: "I have directed the AEC to *continue* [a verb selected obviously for its deceptive value] its work on all forms of atomic weapons, including the so-called hydrogen or superbomb. Like all other work in the field of atomic weapons, it is being and will be carried forward on a basis consistent with the over-all objectives of our program for peace and security."

In the small, clannish world of scientists and physicists, the President's decision was an enormous blow to the prestige of Oppenheimer and his associates, a remarkable victory for the relatively insignificant Lawrence-Teller group. That night at Los Alamos and Berkeley the victorious scientists—Teller, Lawrence, Latimer, Alvarez—celebrated the victory, but with no illusions. Better than anyone else, they knew that in spite of White House backing, a tough battle lay ahead—and not all of it would be scientific.

That same evening, several thousand miles away in Washington, Lewis Strauss had several guests in his Shoreham Hotel suite to celebrate his birthday. Dr. Oppenheimer was among them. His lean, dramatic face was tense. He approached another guest, and, with a note of unswerving dedication, remarked: "As Woodrow Wilson said, 'A battle is never won or lost.'"

The Problem

EDWARD TELLER was unaware that the battle for the hydrogen bomb was reaching a critical phase in Washington. He also assumed the fight had been lost.

Teller learned of President Truman's decision to "continue" with the hydrogen bomb from headlines in the Los Angeles newspapers. He had gone there from Los Alamos to arrange a job on the faculty of the University of California at Los Angeles for the following academic term. When he read the Washington dispatch reporting the momentous decision, he called the University to ask to be relieved of his commitment,

and caught the next airplane back to Albuquerque. Flying on to Los Alamos, he rushed to the office of Laboratory Director Norris Bradbury.

Teller expected to receive orders to go ahead at full pace on thermonuclear research. He found Bradbury in no such frame of mind.

The public decision had been made so hastily that no secret directive to the AEC accompanied it. When, a few days later, this directive was prepared, inside the AEC, for the President's signature, it was so worded as to leave doubt whether the President wanted merely a thermonuclear study or a bomb. Not until the directive came to the attention of the Joint Congressional Committee was the strange ambiguity corrected. The Committee demanded—and got—a new Presidential directive. And even this one—again written in the AEC—was not entirely explicit. It was used a year and half later by the anti-H-bomb forces to argue against the kind of specific work on hardware that Teller proposed.

Even after he received the second directive, Bradbury continued to counsel caution.

Feeling among many scientists at Los Alamos, Teller discovered, was generally hostile to the H-bomb. The fight in Washington had been long and bitter. Oppenheimer's position, and that of his colleagues on the General Advisory Committee, were well known in Los Alamos. Copies of the GAC report had been widely circulated at the laboratory earlier by direction of AEC General Manager Carroll Wilson, presumably to prepare the scientists for a briefing of McMahon and his Joint Committee members. The implication was that the GAC hoped that the scientists at the weapons laboratory would be successful in persuading McMahon against the hydrogen bomb.

The hostility to the H-bomb at Los Alamos has since been widely debated. Many hydrogen-bomb advocates blamed the situation on the direct intervention of Robert Oppenheimer, though there is no evidence that he took overt action to persuade the scientists at the weapons laboratory to strike against the President's decision. There seems to be no question that his opposition, as expressed in the GAC report, was sufficient to produce a widespread reaction. Oppenheimer was the most influential figure in U. S. science. He was venerated by the younger physicists in the weapons laboratory. Moreover Bradbury's conservative approach had its effect.

The extent to which Oppenheimer influenced his onetime physics student, Bradbury, is a matter of controversy as yet unresolved. It seems clear that Bradbury owed his appointment to Oppenheimer. Moreover, it is clear that as the powerful head of the AEC's General Advisory Committee, Oppenheimer could, in the days of Chairmen Lilienthal and Dean, have caused the removal of a weapons-laboratory director who opposed him. Some members of the Congressional Committee believed that Oppenheimer controlled Bradbury. Said one: "Oppenheimer's influence on Bradbury can hardly be exaggerated."

• • •

Far into the postwar period, and long after many Americans were abruptly changing their minds about the nature of Soviet Communism, Los Alamos, remote and preoccupied, preserved a collective state of mind that can only be described as "soft" on this issue. Loaded with Communists and former Communists during the great wartime effort to beat Hitler to the atomic bomb, Los Alamos still had some of them on its rolls after this tolerance had fallen into extreme disfavor in the nation at large.

One remarkable encounter between the laboratory and Lewis Strauss, while he was still a member of the original AEC, left scars that neither side can perhaps easily forget.

An FBI report crossed Strauss's desk alerting the AEC to the fact that a man, who had been a Communist until a few months before his employment at Los Alamos, was then custodian of the top-secret library at the weapons laboratory. He had been employed while Oppenheimer was director of the laboratory and had been certified repeatedly by the laboratory officials as "essential" in connection with wartime draft deferment. At the time of his employment, the report noted, this man who was "essential" to the development of an atomic bomb had been a street-railway motorman. Strauss called for his personnel records to ascertain whether at the time of his employment by the Manhattan District, or later when he had been integrated on the AEC payroll, he had stated his Communist membership. He had not.

The AEC promptly alerted Los Alamos and asked for a complete explanation of his present status and his failure to acknowledge his Communist membership. The Commission received a well-written letter from the employee explaining that he had a wife and family to support and that on both occasions it was clear that such an acknowledgement would have denied him employment. Later, when the Commission indicated that the employee would have to be fired, it received notification that Dr. Bradbury and his top staff assistants were coming to Washington to discuss the case. Before the Commission, Bradbury and his senior associates strongly opposed such action and assured the Commission that the employee was of the highest loyalty and integrity. The Los Alamos staff members added that they would relieve the atomic Commissioners of responsibility in the matter. Moreover, they added, if the Commission insisted on his dismissal, the senior members of the Los Alamos staff could not be held accountable for the consequences in terms of the work of the weapons laboratory.

The Commissioners were happy to buck the burden of reply to Lewis Strauss. He paused for what seemed then like an eternity, but which he now concludes was about thirty seconds. Then he drew an analogy to the field that he knew best, banking.

"Suppose," he began, "we were the directors of a bank and had discovered that our cashier had once been convicted of embezzlement. When we checked his records, we learned that he had concealed this information from us on all occasions. We asked him about it and he replied that, yes, he had been an embezzler, but that he could not have told us that at the time of his employment because if he had, he would not have gotten the job. He needed the work because he had a wife and family to support.

"Let us suppose, then, that we decided on the dismissal of this cashier and the vice-presidents of the bank came to us in a body to say that they had worked with the cashier for some time and were confident that his embezzling days were at an end. Moreover, they said to us: 'We, the vice-presidents, relieve you of your responsibility as directors. If you go through with this, we will not be responsible for what happens to this bank.'

"I am sure we would have to reply to our vice-presidents: 'Gentlemen, in the first place, you cannot relieve us of our responsibilities as directors. We, by law, have responsibilities to the stockholders and depositors of this bank to protect their investments and their deposits to the best of our abilities. You cannot relieve us of these responsibilities since your total assets do not even come close to equaling the assets of this bank. If you say you cannot be responsible for the consequences should we fire this cashier, we had better make clear where we stand immediately. You need not return to your desks, gentlemen. Their contents will be carefully packaged and sent to you.'"

When Strauss had finished, the protesting Los Alamos staff

officers were dismissed from the AEC conference room. With little further discussion, the Commissioners voted unanimously to dismiss the top-secret librarian who had concealed his Communist membership. Bradbury and Company returned to Los Alamos. There were no resignations from the senior staff.

Teller's enthusiasm to get on with the White-House-ordered hydrogen-bomb program was quickly dampened. The scientific and engineering problems that confronted him, if Truman's orders were to be carried out, remained enormous.

The target of the wartime Los Alamos group had been the development of a weapon that would release some of the energy bound into the nucleus of the heavy element uranium. When the atomic program began, scientists regarded two isotopes of uranium, uranium 233 and uranium 235, and the man-made element plutonium as "fissionable." The term was misused, but it meant, in this case, that the big nuclei of these uranium isotopes could be broken up if struck by a fast-moving neutron. If enough "fissionable" uranium was assembled together in a "critical" mass, it would sustain a "chain reaction," creating more neutrons as the process developed, and would explode with tremendous force.

This process has been described by the *New York Times*'s scientific correspondent William L. Laurence as the "spontaneous combustion" of the atomic nuclei. This "spontaneous combustion" was only the beginning, though an essential beginning, to the art of extracting the enormous quantities of energy locked up in the atomic nucleus. It was the step on which Director Oppenheimer and his associates at the Manhattan Laboratory at Los Alamos concentrated during World War II.

Another step was already well known in theory to the scientists of the Manhattan District. From the lightest element, hydrogen, to the center of the atomic scale, energy can be released in the fusion of two nuclei to form a new nucleus further down the atomic scale. For example, if two hydrogen nuclei were brought together with sufficient force, they would fuse and form a nucleus of the next element down the scale, helium. The helium nucleus would weigh less than the combined weights of the original hydrogen nuclei and the difference would be released in energy.

There was no known or suspected method of inducing this reaction "spontaneously." It could only be done theoretically by thermal agitation or in one simple word, heat. Just as chemical fires are ignited by heat, nuclear fires could be ignited by heat. The temperatures suggested, however, were enormous, greater in fact than had ever been known on earth.

The "spontaneous" atomic bomb had exploded with a force many thousand times that of one of the more explosive chemicals known to man, TNT. For brief millionths of a second—while it held together—the atomic bomb had produced temperatures then unknown in the solar system.

But in the millionths of a second the atomic bomb produced its great heats, the temperatures would have to rise to at least a hundred million degrees to ignite even the most combustible combination of heavier hydrogen isotopes.

The two atomic bombs the U. S. dropped on Japan at the end of World War II were comparatively crude affairs. They developed a force equivalent to twenty thousand tons of TNT. Measured in kilotons (one kiloton is equivalent to a thousand tons of TNT), the bombs were twenty kilotons in force. Counting Alamogordo, and the two bombs that were dropped at the Bikini tests in 1946, the U. S. exploded five twenty-kiloton bombs. In 1948, during the "Operation Sandstone" test at Eniwetok, the bombs were improved for the first time. According to a statement of Senator Ed Johnson of Colorado, a member of the Congressional Atomic Committee, the bombs were increased in force to six times the power of the wartime bomb, or to about 120 kilotons.

In the World War II bombs, a critical mass of uranium was created by dividing the necessary amount of the metal into wedge-shaped pieces and driving them together with great force. This was accomplished by fixing charges of chemical explosive (such as TNT) in the firing mechanism so that they would implode the wedges into a common center. The implosion and the heavy metallic tamper around the bomb provided sufficient inertia to hold the bomb together while the chain-reaction developed force. In the postwar bombs, both the firing mechanism and the tampers were improved. Three such bombs were exploded. No further tests were carried out during 1949 or 1950 ("Joe One" was the only nuclear explosion in 1949).

For his thermonuclear project, Edward Teller needed more and more heat for longer and longer periods in the atomic explosions before he would have an effective thermonuclear "trigger," or "match." The wartime bomb generated 50 million degrees for 1.1 millionths of a second. He knew from his study of reaction times that a mixture of hydrogen's two heavier isotopes, deuterium and tritium, in their liquid form, would "ignite" in 1.2 millionths of a second at temperatures of 100 million degrees. The improved atomic bombs brought him within range of a deuterium-tritium "fire" that in turn might "boost" an atomic explosion to the 400-million-degree temperatures that would ignite other possible thermonuclear fuels, more readily available than tritium. One possibility was liquid deuterium. Thermonuclear weapons made entirely of deuterium-tritium mixtures were virtually out of the question because of the tremendous cost in money and atomic resources of manufacturing tritium. This point had been heavily labored by the AEC's General Advisory Committee.

But each improvement in the fast-neutron bomb was a step toward Teller's goal. He had helped enthusiastically with the theoretical studies of atomic-bomb improvements on his "temporary" return to the weapons laboratory in 1949.

There were still formidable theoretical and mechanical obstacles, however, before the uranium bomb, even as it had been improved by 1948, would be a workable trigger for a useful thermonuclear bomb. No way of engineering a hydrogen bomb had been proposed. How would a deuterium-tritium mixture be arranged around the uranium trigger so that the whole thing did not blow apart before the reaction could proceed?

Tritium is not only extremely difficult and expensive* to manufacture; it could be made only at the sacrifice of fissionable plutonium, since both are produced in the same type of pile. For each gram of tritium, the U. S. would sacrifice eighty grams of plutonium. Tritium, moreover, has a half life of twelve years. That is, every twelve years one half of a given quantity of tritium decomposes by radioactivity.

A bomb made of deuterium and tritium would be no bomb at all but a refrigeration plant. To be preserved in their liquid state, deuterium and tritium must be kept under pressure at more than 400 degrees below zero. This kind of hydrogen "bomb" could not easily be loaded into the bomb bay of an aircraft and flown thousands of miles to an enemy target. Dr. Oppenheimer had pointed out in his letter to Harvard President Conant that the "miserable thing" probably could not be gotten to a target "except by oxcart."

A hydrogen "bomb" would not be the most effective bomb until it could be made of something besides the liquefied gaseous isotopes of hydrogen. A transportable thermonuclear bomb should be "dry."

The first slow work that began on the hydrogen project—some time after Harry Truman thought he had set the ma-

*One estimate of the cost: a million dollars a pound.

chinery in motion to develop this weapon—was a series of calculations designed to determine the minimum amount of tritium needed to boost a fission bomb into a thermonuclear trigger. The results, for which Teller himself takes full responsibility, were disappointing. They showed that an extraordinary, if not a prohibitive, amount of tritium would be necessary.

When the reports reached Washington, the opponents of the thermonuclear program in the AEC seized upon it and gave it wide circulation. It seemed to prove the technical objections of the General Advisory Committee. Teller was in serious trouble. Thousands of man hours of the nation's top scientific talent were needed to break through the barriers of calculation and experiment that lay between Teller and success.

The Second Delay

TELLER'S NEXT MOVE was to call again for help. If the thermonuclear program was to succeed, he would need a large-scale return to the laboratory by the men who built the atomic bomb . . .

Teller issued an urgent call through scientific channels. The response: two top-rank U. S. scientists volunteered. John Wheeler of Princeton University agreed to go to Los Alamos. His colleague, Professor John Von Neumann of the Institute for Advanced Study, agreed to make himself available for consultation. Later Dr. Lothar Wolfgang Nordheim, of the University of North Carolina, signed on at Los Alamos. A student of Bethe's, Dr. Conrad Lee Longmire, also worked on the project along with a student of Teller's, Marshall Rosenblueth.

Bradbury was reluctant to put any of the members of the existing Los Alamos staff at Teller's disposal. He favored a cautious program. Moreover, he could argue with some justification that his scientists already had more than they could do in fission-bomb improvement. Teller neaded an army; he had less than a squad . . .

In Washington, Teller's friends set about to help with the recruiting. The Joint Congressional Committee offered to help the AEC enlist scientists by issuing a statement on the extreme importance of the hydrogen work, addressed to scientists. This offer, acting AEC Chairman Sumner Pike curtly declined after (the Joint Committee was led to believe) he had consulted with GAC Chairman Oppenheimer.

It developed that the majority of the key wartime atomic scientists not only refused to participate in the H-bomb program,* but some actively lobbied against it. In the spring of 1950, shortly after Truman's go-ahead signal, the anti-H-bomb campaign broke out into a brief but intense public debate. While the bomb lay derelict in a musty report in the AEC files, the scientists were content that it remain highly classified.

When it was revived by Truman's order, they insisted on the public's right to all the facts. The tactics varied. Some opponents spoke right out against the H-bomb. Others urged renewed attempts at negotiations with the Russians. Others advocated a stronger defense of the U. S. Others demanded that the U. S. release its atomic secrets. Others pushed for a more active A-bomb program; others sought to frighten the U. S.—and the world—with scare stories about how the H-bomb could wipe out civilization, even life on earth.

The leaders in the anti-H-bomb lobby were the opinion leaders of U. S. science: Einstein, Rabi, Bacher, Conant, Szilard, and others. The effect of their arguments on the younger scientists was massive. They stayed away from Los Alamos in droves.

* * *

At about this time, Teller called Oppenheimer on the telephone at Princeton. He told Oppenheimer that he was not asking for his direct help, but for his help in recruiting scientists to work at Los Alamos. Said Oppenheimer: "You know in this matter I am neutral. I would be glad, however, to recommend to you some very good people who are working here at the Institute." He mentioned a few names. Teller wrote each of them a letter, asking them to come to Los Alamos. None came.

* * *

At length, the anti-H-bomb campaign reached such proportions that the AEC in Washington found it necessary to send out an order prohibiting further public discussion of the hydrogen bomb insofar as it could. The AEC order stated:

> All AEC and contractor employees working on AEC contracts are instructed to refrain from publicly stating facts or giving comment on any thermonuclear reactions of the Commission's program of thermonuclear weapons development. Please make sure the foregoing instructions are immediately brought to the attention of persons working under contracts with this office and are strictly complied with.

The stern AEC telegram, which applied to many of the topflight U.S. physicists (since their universities in most cases held some form of AEC contract), suppressed the external anti-H-bomb campaign.* It did not stop the internal anti-H-bomb campaign, nor did it stimulate a rush of volunteer scientists to go to Los Alamos to help Dr. Teller. . . .

*In Washington, Congressmen who asked the question of the AEC, who on the Los Alamos staff is working full time on the super, were never able to get an answer. Actually Wheeler took a sabbatical year to work at Los Alamos, returned to Princeton in 1951 to head a special thermonuclear research project. Nordheim remained a year. Von Neumann was in and out of Los Alamos. The roster of theoreticians at the weapons laboratory actually declined during 1950, the year of President Truman's decision to build a hydrogen bomb.

*Harry Truman told a White House visitor that he was going to build the H-bomb "behind my own iron curtain."

Painful Progress

THE SURPRISE march of the North Korean Communists into the Republic of South Korea on June 25, 1950, interrupted the campaign against the hydrogen bomb. The demonstrated fact that the Communists were willing to resort to armed aggression to achieve their world-wide aims sobered a few of even the most fuzzy-minded U. S. scientists. Arguments about the "immorality" of the H-bomb began to sound hollow in the face of North Korean bullets. Some scientists came over to Teller's side and offered to help.

In Washington, the general rearmament plan gave the thermonuclear program a new priority. A pro-H-bomb member of the Atomic Energy Commission, Gordon Dean, replaced anti-H-bomb man Sumner T. Pike as Chairman. Plans were hurried for a major expansion of AEC production facili-

ties, including the construction of five huge new piles to make both tritium and plutonium at Savannah River.

But the H-bomb fever had not yet reached Los Alamos—at least not in epidemic form. Only Teller, and the handful of scientists who had earlier volunteered, or switched over after Korea, plugged away on the hydrogen-bomb project. The remainder of the staff at Los Alamos undertook an all-out program aimed at improving the nation's atomic bombs, a program that had been advocated by Oppenheimer's General Advisory Committee, and by many scientists during the anti-H-bomb campaign, though not before. The Los Alamos scientists seemed willing to work on any project except the hydrogen bomb.

Indirectly, the Korea-generated burst of activity at Los Alamos was to have a significant bearing on Teller's thermonuclear program. Since every improvement of the uranium bomb was a step in his direction, Teller applied his thought and energies in this direction as well.

Along with other scientists at the weapons laboratory, he helped evolve a new method of exploding uranium, one that had been foreseen during World War II but that the General Advisory Committee recommended against pursuing in the years before "Joe One." The method has since been described in many published articles by scientists and science reporters.

Uranium explodes when a certain weight of the metal, called a critical mass for obvious reasons, is brought together. Sparked by Teller's intuition, the scientists at Los Alamos began to reason that if the amount of uranium used was reduced at the same time the density was increased, the same explosive effect might be obtainable. This "squeezing" effect could possibly be achieved, they reasoned further, by placing a large quantity of TNT or other high explosives around the edge of a small sphere of U-235 or plutonium. Because it only used a fraction of a critical mass, these bombs soon became known at Los Alamos as "fractional-crit" bombs. The implications of this were not lost on Teller.

Accordingly, Teller and his small handful of associates persuaded Los Alamos Director Bradbury and the Atomic Energy Commission in the midsummer of 1950 to undertake the first thermonuclear test. Back from Washington came the word that the test would be held, not in Nevada, but at the AEC testing ground in the Marshall Islands of the Pacific.* The test had been assigned the code name of "Operation Greenhouse," to be carried out by a special task force in the spring following the Nevada fractional-crit tests. To command the joint AEC, Army, Navy, Air Force task force, the Pentagon had assigned Lieutenant General Elwood R. (Pete) Quesada. For "Greenhouse" Los Alamos would design and build an atomic bomb designed to explode a mixture of deuterium and tritium in a thermal reaction. It would be man's first attempt to light the fires of the stars.

Teller himself was afire with enthusiasm, but once more the fire failed to spread at Los Alamos. The resistance to the thermonuclear program continued. The discouraging tritium calculations proved to be a severe setback for Teller. The staff of the weapons laboratory was busily engaged in preparations for the forthcoming Nevada tests and could find some justification for its unwillingness to get involved in Teller's work.

At about this same time, Dr. Oppenheimer conducted a second panel on long-range objectives for the Department of Defense. The question of the status of the hydrogen bomb came up, and the panel slightingly ruled that it was a "long-range" project. This panel report was used against the H-bomb program at Los Alamos.

Dr. Alvarez has discussed one of the controversial points of the panel. He said: "I remember one statement that Dr. Oppenheimer made because it shocked me so greatly and I repeated it to several people when I got home. . . . Dr. Oppenheimer said essentially this: 'We all agree that the hydrogen-bomb program should be stopped, but if we were to stop it or to suggest that it be stopped, this would cause so much disruption at Los Alamos and in other laboratories where they are doing instrumentation work that I feel that we should let it go on and it will die a natural death with the coming tests [which were the "Greenhouse" tests] when those tests fail. At that time will be the natural time to chop the hydrogen-bomb program off.'"

* * *

Immediately after the report was published Major General Roscoe Charles Wilson, a military consultant to the Committee, went to the Director of Air Force Intelligence to register a complaint about Dr. Oppenheimer. Said Wilson later: "I was worried about something I could not put my hands on. . . . This was a matter of real worry that a general pattern of activity coming from a man of such stature seemed to me to be jeopardizing the national defense."

In the course of the fall, Teller won at least one convert, the new commander of "Greenhouse," Pete Quesada.

Young-at-heart (and in appearance) Quesada was an old-time Air Force pilot who learned to fly in a Jenny "when dogs used to run along the ground barking at the shadow of the plane." Along with Ira Eaker and Carl (Tooey) Spaatz, he helped establish the world's flight-endurance record by keeping the airplane "Question Mark" in the air for an entire week. During World War II, Quesada had proved himself an able air strategist when he bossed an air division in Vandenberg's Ninth Air Force. Quesada, who like many military men had not yet halfway grasped the meaning of thermonuclear explosion, was staggered by what he learned from Teller. He instantly appreciated that the hydrogen bomb, if successful, would be a new order of military weapon, and that of all the services, his own, the Air Force, would stand to gain most by its successful development.

Quesada also learned of the continuing opposition to the H-bomb program. From Teller, Quesada caught a feeling of anxiety about the tests. He soon saw that failure of "Greenhouse" might be a serious, if not permanent, setback to the hydrogen-bomb program, since the opponents would use it as 'evidence" of the futility of the effort. For Quesada and other Teller backers, "Greenhouse" became a major challenge.

In the meantime, in January, 1951, the tests of the fractional-crit bombs* were carried out at the AEC's new test site in Nevada. The results exceeded all expectations. The good citizens of Los Angeles and San Francisco got the news without understanding its significance, when, hundreds of miles from Yucca Flats, they saw the flash of the explosion. Development of the "squeezed down," or fractional-crit, bomb, requiring vastly less fissionable material, automatically, in effect, increased the stockpile of U. S. atomic weapons manyfold.

While the Nevada tests were being prepared, Dr. Stanley Ulam, a Los Alamos mathematical physicist, was working on a theory related indirectly to the thermonuclear problem. Teller, with his characteristically insatiable curiosity, got into a conversation with him about his paper. Not long afterward something Ulam had said in passing turned on a small light somewhere in Teller's storehouse of ideas. That evening as he and his close associate, Freddie de Hoffmann were leaving the

*And, on recommendation of the General Advisory Committee in Washington, at a later date than the Los Alamos proposal.

*In early 1948, the General Advisory Committee had recommended against work in this field.

barbwire-enclosed laboratories at Los Alamos, Teller said absently "I think I have an idea." De Hoffmann thought nothing of it "because after all Edward is always having an idea."

"But the next morning he came in to see me and said, 'Freddie, I think I really have something. Stick some figures into it.' He told me about it and I started to work with my desk calculator. The answer came out right."

The missing "sixth idea" for the hydrogen bomb had been found. It was the direct route to a transportable bomb, which not only dispensed with the need for refrigeration but would eventually dispense with tritium. It would start the atomic scientists down the road to a method of making thermonuclear bombs so cheap and easy to produce they would come to be known as the "baking-powder bombs."

Teller's new idea became known as the "new concept." It enjoyed brief popularity among the intellectually curious physicists at Los Alamos. Then, once again the built-in hostility to the thermonuclear program, now enlarged to include Teller as an individual, set in. Teller found it impossible to get the necessary help at Los Alamos to carry on with his "new concept" at the pace he thought the idea and program deserved.

As the days went by, Teller sensed that he was fighting a lost cause. The AEC scientists at Los Alamos continued to show little interest in his new concept and saw no need for taking any special action or reorganizing the thermonuclear program. One day Teller concluded that if his new ideas for the hydrogen bomb were ever to be a success, he had to get out of Los Alamos, away from the indifference and outright hostility. Teller decided to ask the AEC for a completely new weapons laboratory, with separate staff and equipment.

The very thought of it was fantastic: an entire new laboratory that would cost upward of twenty million dollars (the cost of Los Alamos is estimated at a hundred million) to start. It would require elaborate equipment and the recruiting of hundreds of outstanding young scientists in the face of the campaign against the hydrogen bomb. Difficult as the enterprise seemed, Teller had reached the conclusion that unless he could get away from Los Alamos, the very security of the nation was in grave danger.

Above all, Teller believed that the creation of a new laboratory would be an important goad to the staff at Los Alamos. Just as competition spurs men to greater activity in other endeavors, he reasoned, it would specifically in weapons development. If the Los Alamos staff saw another weapons laboratory at work on a thermonuclear program designed to create weapons of a thousand times the power of atomic bombs, no force on earth would keep it content to tinker along with conventional A-bombs. . . .

Over the heads of everyone in the Atomic Energy Commission, Teller went straight to the Chairman, Gordon Dean. Outlining his new ideas for constructing the hydrogen bomb, he told Dean that if they were to be pushed through to completion, then he, Teller, would have to have a new laboratory and equipment, separate and distinct from Los Alamos.

Dean, who had himself been deeply involved in the secret H-bomb struggle of the year before, needed no lecture to grasp the attitudes at Los Alamos. He also quickly saw the true significance of Teller's new concept—if it worked. Nevertheless, Dean was unconvinced about the need for a new laboratory.

He argued that the laboratory would cost a lot of money. Morale at Los Alamos would probably be greatly impaired if Teller was given a new competitive establishment. The move would divert attention and work from the atomic weapons program at a crucial time. Finally, Dean told Teller it was not likely that Teller could get competent men to man the new laboratory, especially in the light of the campaign against the H-bomb.

Dean approved going ahead with the new concept, provided the work on it was carried out at Los Alamos. The General Advisory Committee was also opposed to the second laboratory. The GAC, which during the bitter fight in the fall of 1949, had said that the H-bomb should not be built because, among other things, it would interfere with normal atomic-bomb progress at Los Alamos, now said that the facilities at Los Alamos were quite adequate for both H-bomb and continued A-bomb development.

More discouraged than ever but unwilling to quit, Teller dined that night at Washington's Metropolitan Club with McMahon's trusted assistant William Borden. Teller outlined his new concept of the hydrogen bomb. Then, with much emotion, Teller made his case against Los Alamos and for a second H-bomb laboratory. By the end of dinner, Borden had promised Teller that he would have his laboratory. . . .

On this trip east, Teller also sought out his old friend Lewis Strauss, who, though he was in private business as the financial adviser to the Rockefeller brothers, continued to have influence in Washington and, strangely enough, at the White House. Democrat Harry Truman retained great respect for the judgment of this Republican banker on atomic matters.

Strauss was heartened to hear of the new concept, saddened to hear again of Teller's continuing troubles at Los Alamos. He agreed to help Teller fight for a new atomic-weapons laboratory.

Slightly encouraged by his minor political success in Washington, Teller returned to Los Alamos and set to work with his handful of assistants. On his return he was summoned to Director Bradbury's office to hear that Bradbury had learned of his activity in the east. Bradbury was furious, charged Teller with disloyalty to Los Alamos and its Director. He accused Teller of violating the Atomic Energy Act's secrecy provision in discussing the subject of a new laboratory and reasons for it with Lewis Strauss, who was no longer in the government service.

• • •

"Greenhouse"

IN THE SPRING of 1951, while Teller and his assistants, including Dr. Frederic de Hoffmann, worked day and night on the test devices in order to have them ready in time, men and scientists began assembling in Eniwetok to carry out operation "Greenhouse." Quesada was on hand to greet the men who arrived. One of those later wrote: "General Quesada is a natural leader. His boyish enthusiasm is infectious. He fairly bubbles over whenever he discusses the operation and displays a courtesy and understanding which blanks out the three stars on his collar."

The men who came to Eniwetok to watch the explosion of the world's first thermonuclear device were divided roughly into two groups: those who did not want to see it succeed and made a point of talking up the exorbitant cost of the device (in terms of tritium), and a smaller group who wanted the test to succeed, expensive or not. The latter group viewed the test in grand perspective: man's first attempt to create the stellar fires. They knew, that for purely political reasons, it was important that the test be successful. Otherwise, the charge could be made that the fusion of the light nuclei was impractical. Such a charge, following failure at "Greenhouse," would almost surely cut off all further U. S. research

into the thermonuclear bomb, in spite of Teller's new concept.

By May, 1951, when the officials from Washington arrived—Joint Congressional Committee members and executive staff director Borden, Robert LeBaron, and others—Quesada's Task Force Three had already detonated two atomic bombs, in order to test blast effect on certain pieces of military equipment. Preparations were well underway for the next test.

• • •

On Eniwetok, Quesada and Teller were busy with the last-minute administrative work of conducting the tests. Though a great many of the personnel and brass had gone to an open-air movie . . . many of them wished to be briefed on what was to occur the following morning just before dawn—weather permitting. In particular, a group of Congressmen needed briefing.

Quesada nominated Dr. Teller. But Bradbury and some of his Los Alamos staff objected strongly. It would look as if Teller were being given all the credit, Bradbury protested, claiming that it would be bad for morale at Los Alamos. Quesada dismissed the Los Alamos objections and asked Teller to deal with the Congressmen.

In his easy, uncomplex manner, Teller briefed the Congressmen as requested. Many present were the semitechnical people who worked on the tests. One of them asked Teller point-blank if he thought the test would be a success. In a low voice, Teller replied: "It will be successful."

• • •

Zero hour was fast approaching.

All official observers were taken to the Officers' Beach Club on Eniwetok. As final preparations were being made, the brass were served coffee and sandwiches. Chairs were arranged in front of the club along the beach facing the direction of "shot" island. Dark glasses were distributed, and the guests were warned not to take them off for at least three seconds following the appearance of the fireball.

A loud-speaker attached to a palm tree kept the observers informed of the progress being made. As the test schedule progressed, each new action was elaborately explained. While the loud-speaker ticked off the minutes, Quesada and Teller walked out onto the club dock to get a better view. . . .

The loud-speaker at the Officers' Beach Club ticked off the last ten seconds: "Ten. Nine. Eight. Seven. Six. Five. Four. Three. Two. One."

Then, the momentous signal came: "T-Zero."

A tremendous ball of flame erupted. Simultaneously, a blast of heat swept across the Beach Club grounds, followed closely by a loud rumbling in the loud-speaker, as the noise from the explosion passed Parry Island. Then, like a great thunderclap, the sound struck Eniwetok.

One observer later described his reactions:

> The heat was simultaneous with the sight of the fireball through our dark glasses (so dark that if you looked at the sun it was only a faint pinprick) and the feel of the heat at some eighteen or so miles was as though you had suddenly opened an oven door. However, nuclear explosions have always impressed me as being very finite. As the cloud moved away (after veering very close to Eniwetok Island) there was a hell of a lot of Pacific in every direction, not even remotely affected, as far as the eye could see. And you wouldn't have known from what you could see that it had gone off.

Though the explosion had been an awe-inspiring sight—man's biggest fireball—it was not known immediately whether or not it had been entirely successful. The instruments on the nearby islands and in the pilotless aircraft that had been flown through the blast had to be examined before the scientists would know whether the proper percentage of tritium and deuterium had burned.

While the task force waited the results, Quesada suggested that Teller be flown up to "shot" island to observe at close range the results of the tests. When he heard of the suggestion, Bradbury once again protested to Quesada. It would look as if Teller were being given exaggerated credit again. Again, Quesada overrode the objections and sent Teller winging toward "shot" island in an Army L-13.

• • •

In the early afternoon, the official results of the test came in: the percentage of tritium and deuterium burned in the heat of the fission explosion far exceeded that hoped for. The test was an unqualified success. It had been proved beyond further doubt that thermonuclear reactions were possible.

• • •

The Atomic Energy Commission has never officially commented on the final shot at Eniwetok. (Indeed, the AEC rarely comments on anything.) However, when scientific discoveries of a major order of importance are made, in spite of government policy, it is often difficult to keep the secret. The scientists soon began to talk of "brilliant inventions" and "revolutionary developments" in the thermonuclear field.

Much later President Eisenhower was to reveal in his memorable address to the United Nations in December, 1953, that the uranium bomb had been refined to a weapon with twenty-five times the force of that of Hiroshima. This would indicate that the uranium bomb had been improved to the point where it could produce temperatures in the neighborhood of hundreds of millions of degrees. If so, the scientists had a match hot enough to light a full-scale thermonuclear explosion. They would not necessarily need a refrigeration plant to keep the trigger cold.

Not long after "Greenhouse," several important trends in the U. S. atomic-energy program became obvious. A "Dawn of Atomic Plenty" suddenly had occurred. It was a dawn that could have occurred far sooner if the U. S. had not been complacent about its atomic monopoly. At the conclusion of the Nevada tests in the fall of 1951, Dr. Alvin Graves stated that during 1951 the AEC had more than doubled its knowledge of atomic weapons, and the stockpile had been increased on a comparable scale.

Atomic bombs were fired off helter-skelter during 1951. More than eighteen atomic blasts were officially acknowledged (from 1945 to 1951 only eight, including the two that were dropped on Japan, were fired). There was suddenly enough fissionable material in the nation's locker for such devices as atomic-powered submarines, for which the Navy let a contract in September, 1951.

The Second Laboratory

THE NEWS OF "Greenhouse" traveled quickly to Washington and to Los Alamos. Pleased with the reaction, Teller passed the time at Los Alamos examining late-arriving test data. He was eager to press forward with a test of a full-scale thermonuclear explosion.

Better than anyone, Teller realized that the "Greenhouse" shots had only been experimental. Many hours of hard work and further experimentation lay ahead before the U.S. could find comfort in the knowledge that its arsenals contained a minimum supply of transportable, full-scale thermonuclear

bombs. Since the foot-dragging at Los Alamos continued, a second laboratory, he believed more than ever, was an important objective.

Time, Teller believed, was fast running out on the United States in a race it seemed hardly aware of for atomic-weapons superiority. The hour was extremely late for creation of a new laboratory, but he still believed firmly in his theory that the results could be forced out of Los Alamos by competition. Moreover, there was work enough in the thermonuclear program to keep two laboratories working at crash speed.

Hoping that his own prestige had increased to the point where he might successfully sway the government to his view, Teller set out for Washington. Almost immediately after arriving in the capital, he encountered General Quesada, who had just returned from the Pacific testing grounds. Over dinner later that night, Teller told Quesada of the increasing significance of some of the final laboratory analyses of the data from the test shot. Everything indicated success far beyond Teller's most optimistic hopes. Quesada was delighted. That night he promised Teller he would begin a campaign to educate the Pentagon to the new revolution.

Meanwhile, the results of "Greenhouse" had caused a minor sensation behind the guarded walls of the Atomic Energy Commission. Teller's new concept had a direct bearing on almost every AEC program, weapons, production, research, and atomic power alike. Gordon Dean was so impressed that he decided to hold a mass meeting of all the Commissioners and the General Advisory Committee, plus any other U.S. scientist who wished to attend. At Oppenheimer's request, the meeting was set for early June at his headquarters at Princeton University.

The nation's leading scientists gathered at Princeton for the important meeting. Among them were Oppenheimer, Bethe, Teller, Bacher, Fermi, Von Neumann, Nordheim, Wheeler, and others. The meeting lasted for three days. Before the formal conference began, Oppenheimer and his friends were openly hostile to the H-bomb. After three days of logic, facts, and figures on the new concept presented by Teller and his friends, further opposition to the H-bomb program seemed patently not in the best interests of the nation. Oppenheimer and other members of the GAC were won over. "They switched a hundred and eighty degrees," one observer put it. By the end of the meeting, Oppenheimer and friends unanimously endorsed a program aimed at developing thermonuclear bombs from Teller's new concept.

One scientist present described the scene: "Teller finished. There was a brief silence. Chairman Oppenheimer finally spoke.

" 'That's it,' he said. It was like the end of a championship chess game. One opponent had seen the outcome and resigned."

• • •

While this important AEC meeting was taking place, General Quesada had gone to the Pentagon to do two things: (1) educate the military brass to the revolution that had occurred on Eniwetok, and (2) warn the military that certain scientists were deliberately lobbying against the military-weapons programs within the AEC, and especially the H-bomb program.

When the General arrived at the Pentagon, he was amazed at the indifference with which top brass viewed his historic Pacific experiments. Air Force officers, including the Chief of Staff, the late General Hoyt Vandenberg, seemed unimpressed with both the results of "Greenhouse" and Quesada's serious concern over the scientific opposition to the thermonuclear bomb. No one in his own service seemed to see or appreciate the fact that the thermonuclear bomb could be the most potent weapon the Air Force could ever hope to have in its arsenal.

Part of the indifference could be attributed to traditional military skepticism about scientific gadgets, part of it to a bitter internal dispute in the Air Force over the use, or non-use, of low-yield or tactical atomic bombs that had been perfected at Nevada six months earlier. The Air Force was divided in debate over the wisdom of manufacturing the small bomb. Proponents of the Strategic Air Command and its doctrine of heavy retaliatory bombing—unaware that a revolution had taken place in the field of atomic weapons—were arguing that the nation's scarce supply of fissionable materials ought to be kept exclusively for use in the larger, more efficient bombs.

In addition to its internal troubles, the Air Force was caught up in a bitter interservice struggle with the Army and Navy. The Joint Chiefs of Staff had been told by the National Security Council to provide a set of force levels that would be sufficient to put the U. S. in a position of strength for a long period of world tension with the Communists. This order led to a famous set of debates in the fall of 1951, with the Air Force advancing the position that it had to have 143 wings as a minimum force, and the Army and Navy opposed. No one seemed to have time for Pete Quesada, the man who, unknown to the Air Force, held the secret of its future pre-eminence in world military struggles in his head.

Quesada tried unsuccessfully to arrange an appointment with General Hoyt Vandenberg, who as first Air Chief to win general recognition of the dominance of air power, was in the middle of the 143-wing fight. Then he dropped down one echelon, sought out Air Force Vice Chief of Staff General Nathan F. Twining. After hearing Quesada out, Twining insisted that Vandenberg take time to see him.

At the appointed hour, Quesada arrived at Vandenberg's office with a carefully rehearsed speech on the revolutionary significance of "Greenhouse." He was shown into the Chief of Staff's office. Enthusiastically, Quesada began his dissertation on the thermonuclear bomb. He had not got very far when Vandenberg, obviously preoccupied with his fight with the Joint Chiefs, interrupted:

"Hell, I saw one of those atomic bombs go off out at Nevada, and it didn't even break a light bulb."

Unable to make headway with Vandenberg, Quesada did not press the thermonuclear bomb further with the Air staff. Not long afterward, Quesada, at the age of forty-seven, retired.

Though officially disengaged from the service, Quesada could not get his mind off either the thermonuclear bomb or Dr. Teller. He felt that failing to educate the Pentagon—and especially the Air Force—to the enormous significance of the thermonuclear bomb, he had let Dr. Teller and his associates down.

He decided to take the matter to Secretary of the Air Force Thomas K. Finletter. In November, Quesada sought out two research and development specialists in Finletter's office, Garrison Norton and William Burden. Finletter had obtained the services of these two men specifically to watchdog lagging Air Force technical and scientific programs. Norton and Burden immediately urged Finletter to take action.

Finletter decided to see Teller. A few days later Teller arrived in Washington from Los Alamos and spent a full afternoon with the Air Secretary. He told of the continuing opposition of the scientists to his project and made his case for the creation of a second laboratory. Teller recalled that Louis Ridenour, the Air Force Chief Scientist, had promised Air Force backing for the project—provided "Greenhouse" was a success.

Finletter called Dr. David Griggs (who had by now replaced Ridenour as Chief Scientist of the Air Force) to his office and told him to put the full weight of the Air Force behind Teller's campaign to establish a second laboratory.

Like Quesada, Finletter quickly grasped that of all services, the Air Force stood to gain most by backing Teller.

Congressional Chairman Brien McMahon was also campaigning to put Teller in his own laboratory. While Quesada was waging his futile campaign in the Pentagon, McMahon addressed several letters to AEC Chairman Gordon Dean, inquiring pointedly into the thermonuclear program and specifically into the matter of the second laboratory. Dean replied that he was opposed to the second laboratory. Of all the Commissioners, only Thomas E. Murray favored the Teller lab. Strauss had left the Commission.

McMahon continued to needle Gordon Dean and the Commission at every opportunity. By the fall of 1951, he had succeeded in creating so much agitation over the laboratory that Gordon Dean felt compelled to convene the General Advisory Committee for a judgment on the matter. Accordingly, the Committee met, under chairmanship of Robert Oppenheimer, and voted eight to one against the second laboratory. Dr. Willard F. Libby, the newest member of the GAC, was the lone dissenter.

The GAC decision infuriated McMahon. He became so annoyed, in fact, that he told Bill Borden to write up a special report to be issued in the name of the Joint Congressional Committee. To be included were these sentences that McMahon dictated: "The Committee specifically suggests that early consideration be given the possibility of a second weapons-development laboratory to supplement Los Alamos at least in certain engineering phases. . . . If the Committee has a single general comment to offer, it is this: Greater boldness and more scientific and technical daring should be brought to bear on the program."

The General Advisory Committee had voted against the second laboratory; the Joint Congressional Committee—which through Congress controls all AEC activities—had gone on record in favor of the laboratory. Gordon Dean was caught in the middle.

At this juncture of the political fight in Washington, a crisis occurred in Los Alamos. The strained personal relations between Bradbury and Teller became intolerable. Teller, who had found the essential clue to the hydrogen bomb, left the weapons laboratory. The circumstances of his departure have been obscured by euphemisms, but the fact is that he was forced out. Bradbury has since described the cause as a dispute over how the thermonuclear program should be run. Bradbury, who was officially responsible, had his own views. Teller had other views. Said Bradbury: "I had to do it in a way that seemed best to me. Ultimately Teller left."

It was Teller's view that Los Alamos still had failed to put the necessary effort behind the thermonuclear program. The departure of the one man who had consistently pushed for the hydrogen bomb and who, moreover, had conceived the way to build it had the predictable effect in Washington.

McMahon demanded that Dean convene the GAC once again to reconsider the earlier veto. In January, 1952, Dean complied, reconvened the GAC, and received its second "No" on the question of the new laboratory. (Dr. Libby again dissented, voted "Yes.")

Early in June, 1952, the Atomic Energy Commission, in reply to a new series of inquiries from the Joint Committee wrote McMahon, again reaffirming its decision not to proceed with the second laboratory. The Defense Department gave an evasive reply. By then, Senator McMahon was bedridden with cancer, which would soon take his life. Bill Borden received the discouraging letter from the AEC and was unofficially notified that the AEC hoped these would be the final words on the matter.

Borden was distressed. Months were dragging by. Progress on the thermonuclear bomb still lagged. McMahon, Teller's strongest Washington backer, was ill, and, as Borden knew, dying. Soon the Joint Committee would be leaderless. More months would pass while a new chairman was selected.

Borden decided to make one final, bureaucratic tour de force to push the laboratory through. He composed a letter to the Defense Department's Military Liaison Committee Chairman, Robert LeBaron. He raised the question of whether LeBaron ought to invoke a special provision of the Atomic Energy Act and appeal directly to the President for a ruling on the matter of the second laboratory. Borden sent one copy of the letter to LeBaron. The letter touched LeBaron on a sensitive nerve, since it required the Military Liaison Committee to appeal to the President for a second laboratory or accept the blame.

The AEC heard about the letter and demanded copies, which were supplied.

Meantime Finletter—after a trip to Los Alamos with LeBaron, Borden, Deputy Secretary of Defense William C. Foster, and others—had made an appeal for the second laboratory directly to Gordon Dean. Finletter pointed out that the various intelligence services had prepared estimates on the Soviet thermonuclear program that indicated that the Soviets might be making remarkable strides. Finletter declared that it was imperative that the U. S. pursue its own thermonuclear program with more vigor.

About this time a report gained widespread circulation that Air Secretary Finletter had said during a Pentagon discussion of the H-bomb: "With seven of these weapons, we can rule the world."

The rumor, which apparently started on the Princeton campus, spread throughout the scientific and academic community and for a brief period threatened once again to provoke a serious sit-down strike against the H-bomb. The incident was reported to have occurred during a briefing of Air Force officers by Teller. Teller's friends asked Finletter about the statement. He denied it categorically. So also did every other person who attended the briefing.

Later Dr. David Griggs, the Chief Scientist for the Air Force, made a special trip to talk with Oppenheimer about the story, about Oppenheimer's alleged opposition to the second laboratory and to the hydrogen bomb in general. The meeting went on for about an hour.

Griggs began by informing Oppenheimer that he had heard the "rule the world" story from associates of his. Oppenheimer said he was familiar with the story, and reported that it had occurred at a briefing attended by Secretary of Defense Robert A. Lovett. Griggs then told Oppenheimer that he had been present at that meeting and that Finletter had said nothing of the kind. Oppenheimer replied that he had confidence in the reliability of his information.

The conversation then turned to other matters. On returning to the Pentagon, Griggs prepared a memorandum that, in part, stated:

> After he had showed me the GAC recommendation of December, 1949, that the United States not intensify H-bomb development, but publicly renounce its development, and when I was pressing the point that such a course of action could well be disastrous to this country, Oppenheimer asked if I thought he were pro-Russian or just confused. After a moment, I replied frankly that I wished I knew. He then asked if I had "impugned his loyalty." I replied I had. He then said he thought I was paranoid. After a few more pleasantries, our conversation came to an end.

Finally Finletter decided to move in the face of AEC

resistance. He sent his assistants to begin negotiations with officials of the University of Chicago. They agreed to establish an Air Force laboratory to build the hydrogen bomb if Finletter desired. The project, code-named "Midway" in proper military fashion, was then put temporarily on the back burner, while Finletter moved to confront the AEC.

AEC Chairman Dean capitulated.

To make it official, he convened the General Advisory Committee for the fourth time and asked that the group rule on the second laboratory. This time, the GAC reversed its three previous refusals and, with Dean, agreed that the laboratory ought to be established. Ten days later, Commissioner T. Keith Glennan appeared before the Pentagon's Armed Forces Policy Council to report that the AEC had decided to move forward with the second lab.

Eighteen months had elapsed since Teller first asked for the laboratory. Senator McMahon died a few weeks later with the knowledge that more than any other man he had launched Teller on the way to the thermonuclear weapon.

In order to take advantage of existing facilities, personnel, and location, AEC Chairman Dean decided to locate the new weapons laboratory at the California Radiation Laboratory extension at Livermore, California. Operated by the University of California at Berkeley, the Radiation Laboratory had for years been under the charge of Teller's friend and backer, Dr. E. O. Lawrence. Commissioner Murray hurried out to the West Coast and on July 1, 1952, negotiated new multimillion-dollar provisions to the contract with the California Research and Development Company, to install additional laboratory facilities and to construct thermonuclear devices. Teller's friend and associate, Herb York, was chosen to manage the laboratory.

Within the following few weeks, Dr. Teller discreetly passed the word through the universities that he was in need of recruits to man the AEC's new thermonuclear weapons laboratory. It was anxious business. One of the main arguments against the new lab was the prediction that no young, capable scientists would apply for work. The opposite occurred: Teller was overwhelmed by young and aggressive scientists, many of whom now came simply to work with Teller. . . .

Now, in his own lab at last, Teller had an opportunity to put his theory into practice. After Teller and York had selected their crew, the physicists laid down the basic research policy for Livermore: No idea was to be considered "too nutty." All hands would be free to pursue, within reason, any novel idea. The motto of Livermore was not conservatism but "aggressive adventurism." With such an atmosphere, Teller hoped to break away entirely from the overcautious, conservative approach to atomic weapons development that had dominated Los Alamos since the end of World War II.

Events in time were to prove that initially the greatest use of Livermore would be to energize Los Alamos, as Teller had long predicted. Once it was actually faced with a competitive situation, the Los Alamos laboratory threw its full energies and very great talents into the thermonuclear program. In the end the more mature staff and the more experienced atomic scientists at Los Alamos significantly outpaced the new laboratory at Livermore in providing the hardware that became the hydrogen bomb.

"It's a Boy"

THOUGH TELLER was helping contrive a weapon that has revolutionized warfare, he had yet to take his place alongside the giants of his profession who have advanced man's fundamental knowledge of his environment. Teller was working primarily toward that goal. Few of the top-flight scientists who have worked with Teller doubted that he would reach it. His mind was not only inventive and ingenious but soared easily to conceptual heights.

Not long after the Livermore Laboratory was established, Teller found time to resume a study he had begun at Chicago, in the postwar years when he worked with Enrico Fermi: the distribution of elements. With the help of associates, he collected all observed evidence on the distribution of elements throughout the observable universe. He believed he might be on an interesting trail. He also kept a close watch on the massive observations through the two-hundred-inch reflector at Mount Palomar. As the data was processed on the observations at the extreme range of the "big eye," they were brought to Teller for study.

He refused to jump to a conclusion without thorough testing, both of his evidence and of the hypothesis he might draw from it.

Said Teller to his associates: "I try to teach my children to say they don't know when they don't know."

As the "Ivy" operation—as the new atomic tests were code-named—approached—but much too late to change the nature of the "Ivy" tests—the atomic scientists finally saw their way to an answer to the problem of taking the hydrogen bomb out of the deep freeze. The method has, of course, never been revealed.

• • •

Meantime, the Los Alamos Laboratory had completed the "Mike" device for "Ivy" and had shipped it to Eniwetok—on schedule—for testing. In the fall of 1952, a new task force began assembling at the AEC's Pacific test atoll. As at "Greenhouse," there were thousands of men, machines, meters, aircraft, ships, scientists, instruments, Congressional observers, and others. The big blast—the full-scale test of the "Mike" device—was to be fired from a "cab"-enclosed tower on Elugelab, one of the small islands making up the atoll, on November 1.

Teller decided against going to Eniwetok to watch the "Ivy" test. The weather for such a test must be perfect, and it was possible that the shot might be delayed for weeks. He did not think he could afford to be away from Livermore that long while he was working on a completely dry bomb. Through coded telegrams, he was kept informed of the activity on Elugelab.

On November 1, at a prearranged time, Teller took station alongside the seismograph at the University of California in Berkeley. The explosion went off on schedule. It was announced by a sharp zig on the seismic recorder. "Shot" island, Elugelab, was wiped out. A crater more than a mile wide and 175 feet deep was blasted in the ocean bed. The fireball extended, within four seconds, to 3½ miles in diameter. Ten minutes after the blast, "Mike's mushroom cloud measured 25 miles high and 100 miles wide. "Mike's" destructive blast, more than three megatons (3,000,000 tons of TNT), contained as much force as that in the combined weight of all bombs dropped on Germany and Japan in World War II.

Because he was uncertain of the political reaction to the news of the thermonuclear explosion, coming only three days before the 1952 Presidential elections, President Harry S. Truman—to his great credit—slapped an airtight security lid on everything concerning the explosion of the "Mike" device.

Fourteen minutes after the blast, as he watched the seismograph recording with satisfaction, Teller said to a friend: "That's very nice."

Then he walked to a phone and called Herb York at Livermore Laboratory. In guarded words, which would be meaningless to a listening enemy but which York understood, Teller said that the experiment had been a success. York in turn sent a telegram to some of Teller's friends at the Los Alamos Laboratory, which had no immediate communications with Eniwetok or an adequate seismograph. A prearranged signal, the message read:

"It's a boy."

More than a year later, through the release of the twenty-eight-minute movie, "Operation Ivy," the American people obtained a fuzzy, soap-opera look at "Mike" and what it did to Elugelab. Through this amateurish movie,* and through speeches by Congressman Sterling Cole, Chairman of the Joint Congressional Committee on Atomic Energy, the public learned of "Mike's" fearful power. Said Cole:

> If [the explosion] occurred in a modern city, I am told that the heat and blast generated would cause absolute destruction over an area extending three miles in all directions from the point where the hydrogen device exploded. This is an area of complete devastation—using the word "complete" in its most precise meaning—six miles in diameter. The area of severe-to-moderate damage would stretch in all directions to seven miles from ground zero. Finally, the area of light damage would reach ten miles from the point of detonation. In other words, an area covering 300 square miles would be blanketed by this hydrogen explosion.

The "Castle" Tests

THE EARTH SHOCK of the "Mike" explosion alerted the world to the realization that the United States had entered the thermonuclear age. With even this clumsy device, the U. S. for the moment could claim a super monopoly in atomic weapons. The nation could find some comfort in this fact, but not nearly so much as it had found in the A-bomb monopoly. The man in the street knew instinctively what the atomic physicist knew positively—that if the Russians could master the A-bomb, they could master the H-bomb, and that it would be only a matter of time before instruments in the free world would pick up earth shock waves originating in the vast wastes of Siberia.

No one knew these facts better, or saw the nature of the desperate race with greater clarity, than the atomic scientists at Los Alamos and Livermore now engaged in an all-out effort at once co-operative and competitive to win. Day and night they worked to complete a transportable, easily manageable thermonuclear bomb. They had no way of knowing their relative position with their Soviet opponent.

Nine months after "Mike," on August 8, 1953, Russian Premier Georgi M. Malenkov made a speech to the Supreme Soviet. He spoke as follows:

> It is known that abroad the partisans of war have for a long time cherished illusions of the United States' monopoly in the production of the atomic bomb. . . . The United States of America has long since ceased to have the monopoly in the matter of the production of atomic bombs. . . . The Soviet government deems it necessary to report that the United States has no monopoly in the production of the hydrogen bomb either.

Malenkov's words startled Washington, Los Alamos, and Livermore. There had been no evidence of a new atomic explosion anywhere in the elaborate U.S. detection system.

Then, four days later, on August 12, the U.S. detection system picked up positive evidence of a Soviet thermonuclear explosion. Through much the same channels that had relayed the secret of the first Soviet atomic explosion, the word of the thermonuclear "Joe One" was passed to Washington. An elaborate effort to obtain radioactive particles from the new explosion was mounted. It succeeded a few days later. It seemed clear that Malenkov had had such great confidence in the success of the Soviet thermonuclear test that he had made the announcement of it four days in advance.

While the free world shuddered at the news of the Soviet explosion, AEC physicists worked day and night to ascertain from the evidence of the Soviet dust cloud just what the Soviet had accomplished in the thermonuclear field. The important question was whether the Soviets were using some form of hydrogen in a liquid state or whether they had come up with some more direct approach to a useful weapon.

When the analysis was completed, the report was quickly passed to the AEC in Washington and to President Eisenhower. It was a sobering document.

The evidence indicated the Soviets had achieved a technically advanced thermonuclear shot and were, in some respects, ahead. They had already accomplished some of the things the U.S. had hoped to do in the test to be held in the spring of 1954. Just as they had short-cut early U.S. developmental stages in the atomic bomb, they had appeared to bypass the "deep freeze" stage of U.S. thermonuclear development.

The power of the Soviet explosion was estimated by U.S. experts at one megaton (1,000,000 tons of TNT). . . .

On receipt of the news, President Eisenhower called the National Security Council into special session, in order to consider the significance to over-all U.S. policy of the Soviet developments. From this point forward, the U.S. would deal with a Soviet Russia armed with the same predominant weapons the U.S. hoped to possess.

Added to its heavy superiority in conventional weapons, the hydrogen bomb would one day make the Soviet Union a threat not only to Europe and Asia but to the entire world. With the news of the Soviet thermonuclear explosion, Dwight Eisenhower became the first President to have to face the fact that the United States could be destroyed by an enemy.

During the first days of evaluating the significance of the latest news from the U. S. atomic detection system, two questions were uppermost in the President's mind: (1) How long would it take the United States to produce a droppable bomb? (2) Were the Soviets yet in a position to wage thermonuclear war, or to enforce their will on the free world by thermonuclear ultimatum? The answer to the first question was supplied by the new Chairman of the AEC, Lewis Strauss: seven months. The answer to the second, as given by the Central Intelligence Agency, was that the Soviets would *not* be in the years 1953 or 1954 in a position to wage thermonuclear war. They had neither the required force of long-range jet bombers nor a sufficient stockpile of bombs.

There was another important question to be settled. Should the American people, and their allies in the free world, be told that the Soviet Union had now outmatched the West in

*Los Alamos personnel who supervised the preparation of the movie were careful to see that no scenes included Edward Teller. Some of Teller's friends at Los Alamos had other ideas. During the filming of the so-called staff meeting at which Dr. Bradbury allegedly gave the go-ahead for the bomb, a friend of Teller's clandestinely substituted a picture of Teller for a picture of an A-bomb cloud on the wall behind Bradbury. The particular scene survived final editing and in the released version of the film Teller was identifiable to a few knowing scientists.

a technical race for the thermonuclear bomb? It was a question that was not easily answered. One group of top atomic policy makers, led by the Chairman of the Joint Committee, Sterling Cole, urged that the American people be given the facts. Another faction of the government, led by AEC Chairman Strauss, argued against revealing the secret.

The White House failed to resolve the issue at first. The result was more confusion in Washington. Top government officials began to assess the facts of life in the thermonuclear age. Defense Secretary Charles E. Wilson had been laboring to reduce military expenditures, so he assured the nation the "Russians are not ten feet tall." Civil Defense Administrator Val Petersen found it almost impossible to get any kind of program underway even to mitigate the disaster of a surprise hydrogen attack, so he sounded a ringing alarm. However, the most revealing statement of the period came from Chairman Cole: "The Russian H-bomb can be delivered by air—that's why I am so disturbed and troubled."

It was lost in the confusion that continued to mount. Finally President Eisenhower himself acted to put an end to the ill-considered babble of atomic misstatements. No member of his administration would in the future speak on atomic matters until his statements had first been cleared with AEC Chairman Strauss. With one or two early exceptions, the order took hold.

The fact seemed to be that the Soviets—as Lewis Strauss stated in a speech—had started work on the thermonuclear bomb much in advance of the U. S. and had simply accumulated a big head start. In 1949, while Washington debated whether or not to launch a thermonuclear program as a result of "Joe One," the Soviets were plugging away on their own thermonuclear program and had amassed a dangerously long lead.

By now, nuclear physicists throughout the nation were alert to the danger, and the maximum effort went into the U. S. thermonuclear program. Both AEC weapons laboratories, Los Alamos as well as Livermore, were fully mobilized for the job. There was ample work for both, and the scientists at both did their utmost. Los Alamos made the greater contribution.

On March 1, 1954, the first prototype of a U. S. droppable bomb exploded at Eniwetok as part of "Operation Castle." The bomb was shot from a tower in order to obtain more accurate measurement data. The enormous blast, estimated at about 750 times the power of the Hiroshima atomic bomb, became famous prematurely because an unexpected wind shift showered a wandering Japanese fishing boat with radioactive ash with the result that a group of Japanese fishermen manning the vessel became the world's first, if nonfatal, casualties of a thermonuclear bomb.

* * *

The responsibility of informing the American people of the real significance of the March 1 Eniwetok test was assumed by Joint Committee Chairman Sterling Cole. Without drawing attention to his statement seven months earlier following the Soviet thermonuclear explosion (in which he said the Soviets had a droppable bomb), Cole said:

"We have passed another milestone. We now have a deliverable hydrogen weapon that can be dropped anywhere in the world."

The March 1 shot had been expected to reach about twice the force of "Mike," 7 megatons (7,000,000 tons of TNT) or perhaps exceed it. Actually, as Strauss points out, the scientists miscalculated. It exploded with the incredible force of 15 megatons.

The task-force commander planned to follow the March 1 shot with a supergiant of all atomic bombs, which originally had been assigned a predicted force of 15 megatons. The new calculations pushed the giant bomb near the practicable limit of thermonuclear weapons, 45 megatons, 2,400 times the force of Hiroshima. The schedule of the tests was changed to put it last. The probability was that its mighty fireball and shock wave would destroy the entire chain of advance camps between Eniwetok and the "shot" island.

Then at the last minute the task-force commander and Atomic Energy Commissioners decided that the bomb could not be fired without unacceptable risk to ships at sea and Marshall Island natives. It was postponed for a later test in a greater expanse of the Pacific. But in the global competition of the scientists, where results are read on seismographs and dust samples, the Soviets were advised in March and April, 1954, that the qualitative score was again even.

Air Power and Science

SHORTLY after "Joe One," the Air Force faced up to the need of a revamping of SAC. It began by assigning SAC a new commander, one of the toughest, most uncompromising in U. S. military history: General Curtis E. (for Emerson) LeMay. LeMay, one of the leading authorities on strategic bombing, received orders from Air Force Chief of Staff General Hoyt Vandenberg to recast SAC into a tightly knit, tough, fighting force. Its equipment, its men, and its training must all be of the finest obtainable . . .

Under LeMay, SAC, a controversial outfit from the moment it was founded, became even more controversial. Many Army and Air Force officers, disciples of the "tactical" school, who believed a nation's air striking power should not rely exclusively on strategic bombing, resented the fact that LeMay and SAC were draining off most Air Force procurement and operational funds, leaving practically nothing for air defense and tactical aviation. The Navy, which had been excluded from a role in the Strategic Air Retaliation System (and hence atomic weapons) through the institution of SAC, was jealous of LeMay and his big bombers . . .

The nuclear physicists, who had organized after the end of World War II to expiate the "sin of Los Alamos," to wrest the atomic bomb away from the military, give its secrets to the world, and bring an end to all wars, were especially annoyed by the specter of SAC. They believed that, by generating fear in the Kremlin, it served as a goad to Soviet development to counteratomic weapons. They argued that SAC aroused certain misgivings among our allies and that a renunciation of atomic-offensive power by both major adversaries—the U. S. and the U.S.S.R.—was essential to the easement of world tensions. If the U. S. maintained military forces at all, they believed they should be primarily defensive and not offensive in character.

Early in the game, SAC and the concept of strategic bombardment came under as vigorous an attack as the atomic bomb itself by these self-styled military strategists. In addition to advancing the defensive concept and attacking SAC, the scientists, in the belief that the military were incapable of dealing intelligently with them, attempted to wrest all military research and development from their control.*

. . . Through the postwar years, as a result largely of emphasis on SAC and infrequent contact between airmen and scientists, a barrier grew up between some of the nuclear physicists and the Air Force. The appointment of Curtis E.

*They did not succeed. However, by drastically curtailing research and development funds, the scientists reduced the Air Force fighter-development program to a dribble. For three years prior to Korea, no new prototypes appeared.

LeMay, who was dedicated to building SAC into the most powerful military force in the world, further aggravated the scientists . . .

Air Force Chief of Staff Hoyt Vandenberg began the campaign to destroy the barrier by enlisting the services of an eminent U. S. scientist, Dr. Louis N. Ridenour, whom he appointed "Chief Scientist" of the Air Force . . . He was asked to try to establish contact between the scientific community and the Air Force in order to recruit the services of these men for crucial Air Force projects. Ridenour told a friend: "I'm going to be the Van Bush of World War Two point seven."

. . . To try to break the barrier between science and the Air Force, Ridenour formulated a policy of asking for their assistance, in the belief that if they worked with the Air Force they would grow to understand it and approve of its doctrine . . .

Ridenour turned to the Strategic Air Command, on which the fire of both scientific and military critics of the Air Force had centered. But what scientist would undertake this controversial survey? Ridenour decided to ask the man the Air Force considered to be the prime critic of SAC, Dr. J. R. Oppenheimer, to undertake the study. Ridenour hoped that by naming Oppenheimer to make the study, Oppenheimer would learn something of SAC's importance to the defense of the nation, and that, having learned that, he would put an end to the "sniping" and campaigning against SAC. "At least after that," Ridenour told a friend, "it would be 'informed sniping.'"

One rainy Saturday in the summer of 1951, Ridenour climbed in an airplane and flew up to Princeton to see Oppenheimer. After circling Princeton for three hours trying to land, Ridenour finally got on the ground at Trenton and made his way to the Institute for Advance Study at Princeton. Oppenheimer agreed to undertake the survey.

The move to appoint Oppenheimer to head this survey was abandoned in the fall of 1951, after General Pete Quesada returned from "Greenhouse" with reservations about Oppenheimer and his activities, which he made known to Vandenberg and the Air Staff.

Thus was set in motion, after "Joe One," a vast scientific overhauling of the Air Force. Ridenour initiated other studies. One covered all phases of meteorology. Another dealt with nonatomic aircraft armament. All the studies were aimed primarily at mobilizing science for the benefit of the Air Force. The scientist, ordinarily ignorant of and hostile toward air power, was suddenly immersed in air power up to his neck.

The result of this immersion is actually a curious story. The Air Force received immense stimulation from its contact with the scientists and obtained many helpful ideas.* But the Air Force got more than it bargained for. Many of the scientists, who apparently never got over their distaste for the Strategic Air Command, used the Air Force studies to wage doctrinaire warfare against SAC.

The cast of characters among the scientists was constantly shifting, as the Air Force progressed from study to study. But the general underlying theme of minimizing the role of the Strategic Air Command, in favor of this or that doctrine (air defense, tactical), prevailed. It seemed to many top airmen as if some U. S. scientists, unable to stop Teller and his hydrogen bomb, seized on the invitations to study the Air Force as an opportunity to make political war against SAC.

And moving from group to group, uninvited by the Air Force but usually present in the background, was that extraordinary man, J. R. Oppenheimer.

*But the primary contribution to Air Force striking power was made by H-bomb developer Edward Teller, who was never directly connected with any of the Air Force studies.

Less Than Candid

By MID-1952 the vigorous pattern of activity on the part of J. R. Oppenheimer over the years, regarding both the hydrogen bomb and the strategic air concept, had aroused the genuine concern of a small handful of officials in Washington. In April, 1952, Secretary of State Acheson appointed Oppenheimer to be a member of the State Department's Disarmament Committee. Members of the Committee, under the chairmanship of Oppenheimer, soon proposed that the forthcoming test of a full-scale thermonuclear explosion at Eniwetok, scheduled for the fall, be canceled. Some Committee members further proposed that the President should announce that the U. S. had decided on humanitarian grounds that it would regard detonation of a similar device by another power as an act of war.

Though the suggestions did not come directly from Oppenheimer, they came from members of his committee. Had they been accepted, they would have in effect tripped up the U. S. in the race for survival. There were honest men in Washington who, mistakenly or not, believed Oppenheimer was responsible for the suggestions, and these men believed they could discern a disconcerting pattern in Oppenheimer's thinking.

Major General Roscoe C. Wilson, an Air Force atom specialist, had gone to the Chief of Air Force Intelligence to express his concern. Dr. David Griggs, Air Force Chief Scientist, was told by Secretary of the Air Force Thomas Finletter and Air Force Chief of Staff Hoyt Vandenberg that they had serious questions as to the loyalty of Dr. Oppenheimer. "It was clear to me," Griggs said later, "that this was not an irresponsible charge on the part of Mr. Finletter or on the part of General Vandenberg." Griggs was also to say later that "Dr. Oppenheimer is the only one of my scientific friends about whom I have ever felt there was a serious question of their loyalty."

Among those who felt growing concern was the Executive Director of the Joint Congressional Committee, William Borden. Borden was one of the few men in government (besides Oppenheimer) with access to the entire atomic program, from the AEC to the Central Intelligence Agency, from the Pentagon to the State Department, and from the U.N. and NATO to the National Security Council. Since taking charge of the Committee staff in 1949, Borden had watched and investigated with more than casual interest the activity of the man who seemed to Borden his most vigorous opponent in the struggle to provide the U. S. with a large stockpile of modern atomic weapons. Borden began a systematic search of past records and decisions.

Borden later privately told friends: "The entire time I spent working for the Committee was spent fighting the paralysis which gripped the Atomic Energy Commission and the Pentagon. The more I looked, the more it appeared to me that J. R. Oppenheimer was responsible for this paralysis—not merely as to the H-bomb but as to each new type of A-bomb which was proposed, each plant expansion, raw materials, step-up, detection of Soviet test explosions, each reactor project, each step designed to strengthen the military and peacetime industrial power position of the U. S. We won all our battles, but in each case J. R. Oppenheimer's influence delayed us from one to four years."

A strong case had been made publicly in behalf of the

atomic scientists and members of the first Atomic Energy Commission that, if they opposed weapons, they certainly worked diligently to advance the peacetime uses of atomic energy. Borden concluded that this also was contrary to the record. First there was the extraordinary case of the program at Oak Ridge to build an atomic power plant. As a result of various investigations, he came to the conclusion that the following *New York Herald Tribune* story dated May 24, 1948, was substantially correct:

> Ever since the war ended, Oak Ridge has considered itself the leader in research that would lead to the peacetime uses of atomic energy, the so-called power pile. The program had been set up by Dr. Eugene P. Wigner of Princeton, one of the most respected physicists in the United States. It was proceeding, Oak Ridge believed, with all celerity. Then, without warning, the AEC decreed that the program be terminated. Power work, it was announced, would henceforth be centralized in the Argonne Laboratory, outside Chicago. Dr. Wigner's program was jettisoned. The scientists who were employed on it might be rehired by Argonne and might not; the AEC would not bind Argonne's hands.
>
> This struck at the roots of Oak Ridge. Men and women who had planned to make their careers there were told they would soon be jobless. Scientists in other divisions were distraught; their sections might be the next to go. The decision had been made without consulting Oak Ridge and the scientists remembered again that they alone, of all the major installations, are without representation on the General Advisory Committee to the AEC. Worst of all, there was no explanation of the move, beyond a half-hearted statement that it was considered desirable to centralize power research.

Said Edward Teller of the move: "It set our reactor work back many years. . . . I would like to count this as one of the very great mistakes that have been made. . . ."

In fact, no atomic peacetime power reactor ever materialized as a result of the efforts of the AEC. It was literally shoved down AEC's throat by a controversial Navy Captain named H. G. Rickover. A hard and persistent fighter, Rickover pounded on the AEC all during 1946, 1947, and 1948 in a vain attempt to get the Commission to launch a serious effort in the field of mobile atomic reactors. He met with resistance everywhere except in the Joint Congressional Committee. The General Advisory Committee, under Dr. Oppenheimer, ruled that Rickover's project was technically premature.

An extraordinary man, Rickover refused to be put off, and finally, in early 1949, broke through the resistance and got approval to begin the first atomic reactor that would, in effect, turn a wheel. In four years—an incredibly short period of time for a fully matured project—Rickover's atomic submarine engine began to turn over in a mock submarine hull in the desert at Arco, Idaho. The AEC, under Strauss, promptly made Captain Rickover boss of AEC's belated peacetime power program.

Borden considered that at least a partial explanation of the delay could be found in a news story from the Oakland, California, *Tribune* under the date of June 23, 1949, roughly the time that Rickover had wrested his go-ahead from a reluctant AEC:

> Berkeley, June 23. Dr. J. R. Oppenheimer, 44, the noted atom-bomb scientist, is back on the University of California campus he left two years ago for the world scene. . . .
>
> He termed the prospects of civil atomic power extremely remote and from any viewpoint extremely unimportant.
>
> "Nuclear power for planes and battleships is so much hogwash. I think the difficulties have been underestimated."
>
> Civil power will take a long time, enormous investments of money and the all-out cooperation of industry, he said, adding "if we can't get there in 25 years, we might as well take it easy."

* * *

On the strength of his convictions, Borden decided to do everything within his power to prevent Oppenheimer's reappointment to the General Advisory Committee. Oppenheimer's five-year term as Chairman of the GAC, his main government job, was due to expire in June, 1952. Borden soon discovered that there were men in the Pentagon, especially Robert LeBaron and Thomas Finletter, who for one reason or another saw eye to eye with his objective. Moreover, by the spring of 1952, some top U. S. scientists had secretly opposed Oppenheimer's reappointment to members of Congress and the President.

Word of this opposition began to circulate. Oppenheimer himself wrote the President, stating that he did not seek reappointment to the Committee. Then, a campaign to force his reappointment broke out among Oppenheimer's friends. The leader of this campaign was the Chairman of the AEC himself, Gordon Dean. Dean was backed in the Commission by Commissioners Smyth and Glennan. Only Tom Murray among the Commissioners opposed the reappointment of Oppenheimer.

As it progressed through the spring of 1952, the struggle between the pro- and anti-Oppenheimer factions grew bitter. It contributed a widening chasm between the ailing Brien McMahon and his former law partner, Gordon Dean.

At length, Gordon Dean, once again under pressure from many quarters, capitulated and declined to recommend reappointing Oppenheimer as Chairman of the GAC. At the same time Lee DuBridge and James B. Conant were also dropped from the Committee. Oppenheimer was appointed by Dean as a "consultant" to the AEC for a period of one year, the term expiring in June, 1953. The scientific community, when it learned of the shake-up, was startled.

Soon after Dwight Eisenhower took office in January, 1953, the Joint Congressional Committee, on Borden's urgent recommendation, took steps to take to the White House a report on the origins of the hydrogen-bomb program. Six months later, just as he resigned his committee post to enter industry, Borden prepared four hundred questions that troubled him about Dr. Oppenheimer's role in the atomic-energy program.

The Congressional Committee documents and questions that Borden had prepared came into possession of Lewis Strauss, who, under the Republican administration, had been appointed as a special assistant to the President for atomic matters.

On June 5, less than a month before his term expired, lame-duck AEC Chairman Gordon Dean extended Dr. Oppenheimer's consultantship for one more year, to expire in June, 1954. On July 3, 1953, Lewis Strauss was appointed the new Republican Chairman of the AEC to succeed Gordon Dean. Four days later, on July 7, Strauss directed the Atomic Energy Commission to change the security procedures for handling certain classified documents that were in Dr. Oppenheimer's possession at the Institute for Advanced Study in Princeton. The documents were placed in a new facility at Princeton, though Dr. Oppenheimer still had access to them, under AEC supervision.

Borden began to have grave doubts of the adequacy of his action up to this point. "I felt . . . that I had not previously measured up to my duty in this matter. . . . After I left [the Congressional Committee], I took a month off and this matter pressed on my mind. The feeling grew upon me that I had not fully discharged what was required of me in view of the fact I had not taken a position."

On November 7, 1953, Borden addressed a letter to FBI Director J. Edgar Hoover. In it he outlined without evasion his own conclusions as to the evidence of Oppenheimer's activities over the years. Hoover sent it to the White House. "The purpose of this letter," Borden wrote, "is to state my own exhaustively considered opinion, based upon years of study of the available classified evidence, that more probably than not, J. Robert Oppenheimer is an agent of the Soviet Union."

President Eisenhower, after lengthy consultation with Strauss, the Secretary of Defense Charles E. Wilson, and Attorney General Herbert Brownell directed that, pending a security review of the material in the file, a "blank wall" be placed between Dr. Oppenheimer and any secret data.

• • •

Two Atomic Colossi

THE OPPENHEIMER CASE was indeed painful to fair-minded Americans and damaging to the nation's prestige, coming as it did at a time when the issue of "loyalty" and "security" was badly obscured by the demagoguery of Senator McCarthy. But perhaps the pain was a necessary reminder of the obligations a people as fortunate as the Americans have to the idea of freedom.

The plain fact was that on a question of overriding importance Dr. Oppenheimer was wrong, tragically and frightfully wrong. Repeatedly the point was made in Dr. Oppenheimer's behalf that it is not criminal to be wrong. That is undebatable. It is not criminal to be wrong about the weapons of the atomic age, only fatal. Whether Oppenheimer was guided or misguided would have been of no importance had the West learned that Communist Russia possessed the ultimate weapon, after the U. S. had decided not to build it. The Kremlin would have been free to dictate its terms to the world. Not only would the U. S. have lost both liberty and its way of life; the U. S. would have been, as Mr. Churchill suggested, guilty of murdering freedom.

It was an accident bordering almost on the miraculous that the nation had working in its atomic weapons laboratory, where he could pit both his knowledge and his determination against Dr. Oppenheimer, a man like Edward Teller. It is remarkable at the very least that the man who had the genius to build the hydrogen bomb was also a man impelled by the belief it should be built.

The United States cannot afford to court more such close calls with destiny. They will come readily enough in the course of events in spite of our utmost vigilance.

Possession of the thermonuclear bomb holds no answers in itself and shows no way to a decent future. It simply prevents an immediate end to the future. The United States, certainly along with its allies, was caught in the unhappy stalemate President Eisenhower described in his memorable speech to the U. N. on benign uses of atomic energy. Yet it is inescapable that two atomic colossi are doomed for the time being "to eye each other malevolently across a trembling world." It can only be said that better this than a single atomic colossus—the Soviet Union—eyeing a trembling world.

• • •

In the years immediately ahead, it is unlikely that the power of the weapon will again take a quantum jump, but it is almost certain that the method of delivery will. This is where the U. S. and its free allies must expect their next close call with destiny. The inhabited aircraft seems on the very edge of obsolescence as the decisive military weapon. The uninhabited aircraft, or guided missile, is certainly just ahead. To maintain the balance of power, the U. S. must make this critical transition from bomber to missile in time. Under no circumstances can it afford a delay comparable to the delay in building the H-bomb—some four years.

Once a nation's offensive fleet (today it is bombers; tomorrow it will be missiles) is destroyed, war in the thermonuclear age for all practical purposes is over. Depending on the fiber of the people under attack it might continue for months, or conceivably even years. But the "war" would consist only of a progressively melancholy annihilation of the urban population of the resisting nation. It seems doubtful that any people actually could survive the shock of say 1,000 "obsolete" 500-kiloton bombs. It seems more than probable that no people could survive if one substitutes in the equation the potential 45 megatons of the thermonuclear bomb.

Almost all thinking military men agree that the slow mobilizations of past wars are a thing of the past. The attacking forces—or defending forces—will never be stronger than they are on A-day, H-hour. Surprise is a priceless ingredient. An attacker exploiting surprise to the fullest could in one raid hope to destroy both the enemy retaliatory force and his entire industrial establishment.

But, as in warfare from the beginning of time, the element of risk remains in the equation. No battle has ever gone according to plan. An atomic attack probably falls into this generalization. Now the risk is greater than ever before, just as the possibility for quick success is greater. If the defender's striking forces survived to retaliate, a mistake in an atomic war would be mutually fatal. In this geometrical jump in the element of risk there may be some hope for the future, though grim hope it is.

At any time in the year 1954, the U. S. Strategic Air Command had the capability, if the President of the United States issued such an order, to rain down complete urban annihilation on the Soviet Union. Literally within two hours after the first SAC bomber penetrated the Soviet early-warning system, the U. S.—if everything went according to plan—could put 1,000 atomic bombs of 500 kilotons' force on Soviet targets. The bombers would penetrate simultaneously from around a 17,000-mile perimeter, into the 350 million cubic miles of air over the U. S. S. R. The possibility of the Red Air Force blunting this attack in any appreciable degree is remote.

Within another year after 1954 most of the bombs in such a raid would be not 500-kiloton bombs but thermonuclear bombs of at least 15 megatons' force. One thousand Soviet targets wiped from the face of the earth would leave little else to hit even in such a vast land.

None of these bizarre statistics should hold false assurances for Americans. Within only a few years or even less the Red Air Force, SUSAC, must be conceded the same capability against the U. S.

The horror of this monstrous balance of potential annihilation led many of the U. S. atomic scientists who knew its implications from the beginning to seek some spiritual, almost mystical remedy. Unhappily they sought something that did not yet exist and in their frantic search almost destroyed the balance.

• • •

SAFEWAY STORES
INCORPORATED

Common and Preferred Stock Dividends

The Board of Directors of Safeway Stores, Incorporated, on Sept. 3, 1954, declared the following quarterly dividends:

60¢ per share on the $5.00 par value Common Stock.

$1.00 per share on the 4% Preferred Stock.

$1.07½ per share on the 4.30% Convertible Preferred Stock.

Common Stock dividends and dividends on the 4% Preferred Stock and 4.30% Convertible Preferred Stock are payable Oct. 1, 1954 to stockholders of record at the close of business September 15, 1954.

MILTON L. SELBY, *Secretary*
September 3, 1954

WHY WALL STREET JOURNAL READERS LIVE BETTER

By a Subscriber

I work in a large city. Over a period of time I noticed that men who read The Wall Street Journal are better dressed, drive better cars, have better homes and eat in better restaurants.

I said to myself, "Which came first, the hen or the egg? Do they read The Journal because they have more money, or do they have more money because they read The Journal?"

I started asking discreet questions. I found that it works both ways. Men who are well off have to have the information in The Journal. And average fellows like me can actually win advancement and build up increased incomes by reading The Journal. How do I know? Because not long ago I subscribed to The Journal and it has put me ahead already.

This story is typical. The Journal is a wonderful aid to salaried men making $7000 to $20,000 a year. It is valuable to owners of small business concerns. It can be of priceless benefit to ambitious young men.

To assure speedy delivery to you anywhere in the U.S., The Journal is printed daily in four cities—New York, Chicago, Dallas and San Francisco. It costs $20 a year, but you can get a Trial Subscription for 3 months for $6. Just tear out this ad and attach check for $6 and mail. Or tell us to bill you. Address: The Wall Street Journal, 44 Broad Street, New York 4, N. Y. US 9-24

News-Lines

What you as a businessman ☑ CAN and ☒ CANNOT do as a result of federal court and administrative decisions:

☑ **FOREIGN CONSTRUCTION.** You can get information from the Commerce Department on how to bid for foreign contracts in countries of the North Atlantic Treaty Organization. A pamphlet describing the NATO international bidding program is available at field offices of the Department.

* * *

☑ **GOVERNMENT PURCHASES.** You can look for the General Services Administration to take over more of the food purchasing for nonmilitary Government agencies. GSA is expanding its central procurement program for nonperishable foods, replacing this buying by some agencies. GSA eventually expects to take over the big food-buying programs of the Veterans' Administration and the Coast Guard.

* * *

☑ **ADMISSION TAX.** You can, as manager of a tax-exempt organization, still avoid collecting an admission tax at dances even though you pay your entertainers on a percentage basis. In making this ruling, the Internal Revenue Service specifies that the amount paid to the musicians and other entertainers must be reasonable and not more than the ordinary flat rate.

* * *

☑ **FREE SPEECH.** You can, under a recent court ruling, give your employes advice on how to cancel union membership. A court of appeals holds that such action is protected under the free-speech provision of the Taft-Hartley law, since the advice contained no threat or promise of benefit.

* * *

☑ **UNION MEMBERSHIP.** You can sometimes get the National Labor Relations Board to stop a union from offering your employes free membership or membership at a reduced rate during a pre-election organizing campaign. The Board tells one union that such an offer was illegal where it was based on how employes voted in the plant election and on results of the election.

☑ **COSMETICS.** You can find out from the Federal Trade Commission about four changes in the trade-practice rules for the cosmetic and toilet-preparations industry. These changes become effective October 10. One deals with use of the word "free" in advertisements.

* * *

☑ **ARMY PURCHASES.** You can find out from Army purchasing officers about changes in the Army's procurement procedures. A complete revision of the procedures, the first since March, 1951, is published in the *Federal Register*, the official-document journal of the Federal Government.

* * *

☒ **CORPORATION TAX.** You cannot, in filing the income tax return for a corporation, take a deduction for the company's loss in a voluntary cancellation of the debts of its wholly owned subsidiary in exchange for additional shares of the subsidiary's stock. The U. S. Tax Court finds that such a transaction constituted an additional capital contribution for which the parent company was not entitled to a deduction as a bad debt, business loss or business expense.

* * *

☒ **SENIORITY.** You cannot legally make a contract with a union that gives the union complete control over the seniority of your workers. NLRB holds that a contract with such a clause violated the Taft-Hartley Act by unlawfully tending to encourage membership in the union.

* * *

☒ **TARIFFS.** You cannot look for any increase in the import levies for imported hand-blown glassware. The Tariff Commission split, 3 to 3, on the proposed increase, and the President, in rejecting the proposal, acted under a provision of the law requiring him to break ties. The President said difficulties of the industry stem from improved technology in machine-blown glass, rather than from foreign competition.

Conclusions expressed in these paragraphs are based upon decisions and rulings of courts and Government Bureaus. In making their decisions, courts and bureaus consider many facts which, for reasons of space, cannot be set forth in detail. U. S. NEWS & WORLD REPORT, *on written request, will refer interested readers to sources of this basic material.*

You can't take pumps for granted!

They save you work... they may save your life

IN THE HOSPITAL, today, a remarkable man-made pump can take over while the surgeon repairs that greatest of all pumps, the human heart.

That's a far cry from the old fashioned pumps of our grandfathers; as are the hundreds of other modern pumps that are working for you.

IN OUR HOMES, pumps of many makes and types empty washing machines, operate refrigerators, or feed oil to furnaces. At the filling station a pump fills your car's tank with gasoline.

On the road a fuel pump moves the gasoline from tank to engine, while other pumps circulate the oil that lubricates the engine and the water that cools it.

IN INDUSTRY—Specially designed pumps move most everything from milk to molten metals. Such pumps wouldn't be possible without today's special materials.

Pumps made of carbon or plastics resist corrosive chemicals that would destroy metal. Stainless steel pumps assure purity in food and drug production, and other alloy steels make possible pumps that resist extreme heat, cold, pressure, or wear.

THE WORK OF UCC—Better materials for all kinds of pumps—long-lasting alloy metals, tough plastics, entire pumps of carbon—are but a few of the many important products of the people of Union Carbide.

FREE: *Learn more about UCC materials that go into pumps and so many other things you use. Ask for "Products and Processes" booklet J.*

UNION CARBIDE
AND CARBON CORPORATION
30 EAST 42ND STREET UCC NEW YORK 17, N. Y.
In Canada: UNION CARBIDE CANADA LIMITED

UCC's Trade-marked Products include

HAYNES STELLITE Alloys ELECTROMET Alloys and Metals NATIONAL Carbons PRESTONE Anti-Freeze LINDE Oxygen
ACHESON Electrodes EVEREADY Flashlights and Batteries PREST-O-LITE Acetylene PYROFAX Gas Dynel Textile Fibers
KARBATE Corrosion-Resistant Equipment BAKELITE, VINYLITE, and KRENE Plastics SYNTHETIC ORGANIC CHEMICALS

Diversified Industry

keeps the economy on an even keel in Greater Philadelphia

Great are the avenues of progress in metropolitan Philadelphia . . . steel, oil, textiles, chemicals, foods, machinery, shipbuilding, buses, trains, to mention but a few. Nearly 400 of the 446 basic industries found in this country operate here. Few other sections enjoy such diversification. Add to this the advantages of America's fastest growing seaport; a market of over 20 million people within 100 miles; a dependable home-owning working force; unequaled rail and highway facilities reaching every corner of the nation; a modern international airport; excellent industrial sites; available raw materials; and plenty of electric power geared to present and future demands. These make this area great and explain why Philadelphia is a Land of Opportunity for so many. Perhaps for you, too.

PHILADELPHIA ELECTRIC COMPANY

serving the world's greatest industrial area, Delaware Valley, U.S.A.

LIFE AROUND THE WORLD®

memo

FROM LIBYA

U.S.—IN AFRICA TO STAY

TRIPOLI—When you look at the new kingdom of Libya, you don't see much except desert and a few towns—and a large U. S. air base that is making this barren nation, more and more, a vital link in American defenses abroad.

The U. S. Air Force has been using Wheélus Field, just outside Tripoli, since 1948. Now an agreement has been signed with the Libyan Government that gives the United States the right to keep on using the base for another 20 years.

Libya, itself, has slightly more than a million people. Many of them are nomads, wandering about a country larger than the combined areas of France, Germany, Italy and Spain. It became independent less than three years ago because the victors of World War II couldn't agree on what else to do with it. The country is so poor that it has practically nothing to sell the rest of the world except its strategic location.

That single asset, however, is becoming increasingly important to U. S. plans for handling trouble in this part of the world.

At Wheélus Field, the United States had built up one of the finest air bases in its world-wide network. Six thousand American servicemen, including a fighter squadron, are based there. It's a key station for military planes en route to bases in the Middle East.

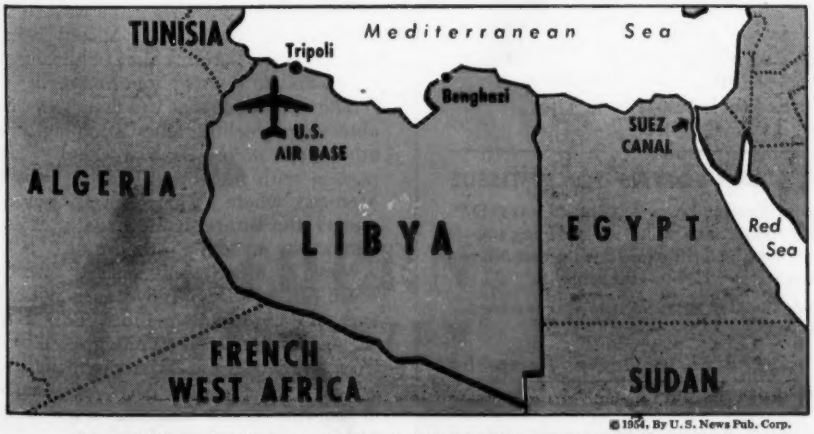
Permanency. You get the impression, looking at Wheélus Field, that the U. S. has been here a long time—and expects to stay on a lot longer.

Stone barracks are comfortable, with no more than four GI's to a room. The 11,000-foot runway and taxi strips are made of concrete rather than asphalt. Servicemen have comfortable clubs, beaches, bowling alleys, theaters, a church and paved roads. Families living on the post have their own U. S.-style houses.

An American plane lands or takes off at Wheélus Field every 45 seconds. This traffic consists mostly of cargo and training flights. If there should be war, however, the field undoubtedly would expand as a key base for combat operations against the Russians.

Britain, too, is finding Libya important to its military strategy. In the famous World War II battleground of Cyrenaica Province, in Eastern Libya, the British have 8,000 servicemen. Most

(Continued on page 112)

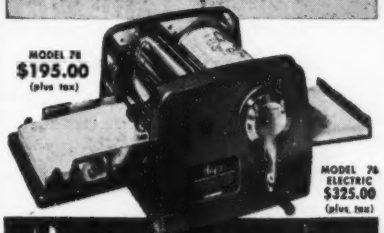


© 1954, By U. S. News Pub. Corp.

IN POVERTY-STRICKEN LIBYA—A VALUABLE BASE FOR THE U. S.

SINCE 1871
MANUFACTURERS OF PRECISION METAL PRODUCTS
ORDNANCE and CIVILIAN
HARRINGTON & RICHARDSON INC.
WORCESTER 10, MASSACHUSETTS

"Always Makes a Good Impression"



Heyer CONQUEROR SPIRIT DUPLICATORS

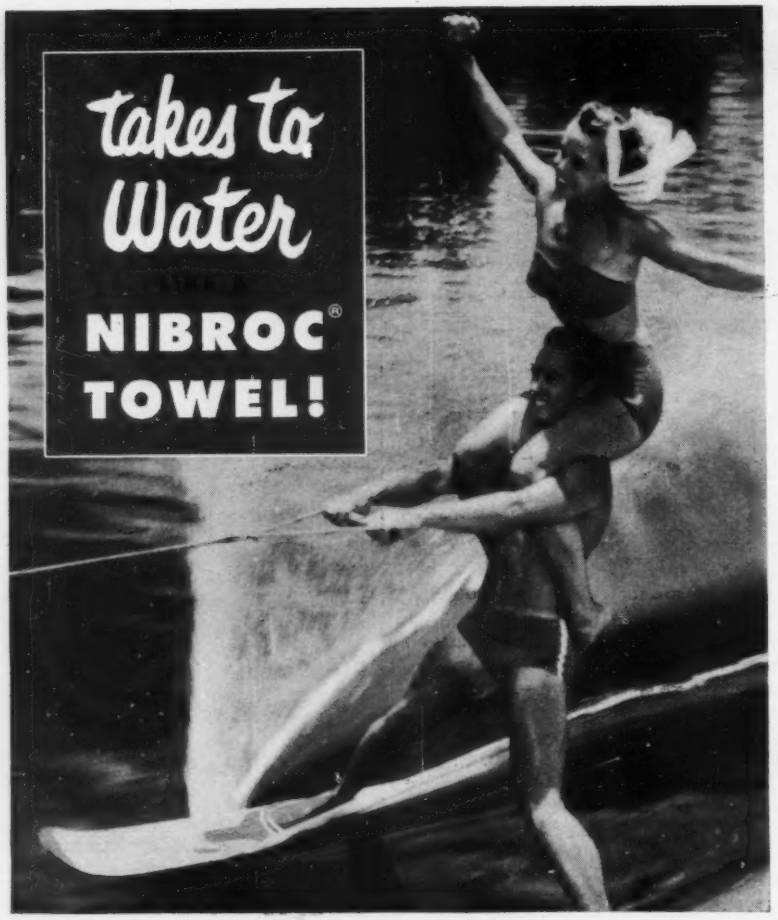
with ALL the features . . .

- Print 120 or more copies per minute.
- Print 1 to 5 colors, in one operation.
- For sharp, clean, copies Conqueror features include—Raise-and-Lower Control . . . Adjustable Fluid Control . . . Built-in Reset Counter . . . Pressure Control . . . Positive Rotary Feed.

The Heyer Conqueror Model 76, Spirit of '76 gives you for the first time "push-button" automatic electric duplicating . . . gives you complete freedom from manual effort.

Write today for descriptive booklet

THE HEYER CORPORATION
1827 S. Kostner Ave. Chicago 23, Illinois
Quality Duplicators and Supplies Since 1903



The paper towel used most by industry for real washroom economy

You can't put your hands on a paper towel that dries as fast, as thoroughly, and in the long run saves you as much money as Nibroc. See for yourself how Nibroc Towels *save as they dry* . . . how they—

Save time because they *dry drier faster!*
Stop waste because *one dries both hands!*
Reduce maintenance because *Nibroc cabinets hold more towels!*
Satisfy everybody because of their *lint-free softness!*

NEW NIBROC SOFWITE AND SOFTAN TOILET TISSUE

Super-Quality Nibroc Tissue is softer because "NIBROCRAFTED."* Costs no more than ordinary tissue. Save money by ordering towels and tissue together. See your classified directory for nearest Nibroc dealer. Or write us at Boston—Dept. DN-9—for samples.

*A unique combination of fibres, exclusive with Brown Company, produced after years of research.

BROWN QUALITY COMPANY, Berlin, New Hampshire
CORPORATION, La Tuque, Quebec

General Sales Offices: 150 Causeway St., Boston 14, Mass.—Dominion Sq. Bldg., Montreal, Que.

memo

. . . U.S. aid to Libya will go on until 1971

of them are ground troops, stationed in Libya as a backstop against trouble in the Middle East.

In return for these privileges, the U. S. and Britain are just about keeping the Libyan economy going by themselves. Britain is paying as much as 10.5 million dollars annually to Libya, underwriting the country's annual budget deficit. The U. S., with its new agreement, is to give 7 million dollars' worth of economic aid to Libya between now and June 30, 1955. U. S. assistance is to continue until 1971. Both powers are putting additional millions into the economy with expenditures on local supplies and labor.

Without that help, Libya undoubtedly would go on the rocks—politically as well as financially.

Poor. The country has no industries to speak of, and no known mineral resources. Only 2 per cent of the land is fertile. The rest is mostly desert. About 95 per cent of the population is still illiterate. Fewer than 20 Libyans have a university education, and the Government is having to call on foreigners—Egyptians, Iraqis, Britons and even Americans—to fill Government posts. The entire Libyan Army comes to about 450 men, commanded by an Iraqi.

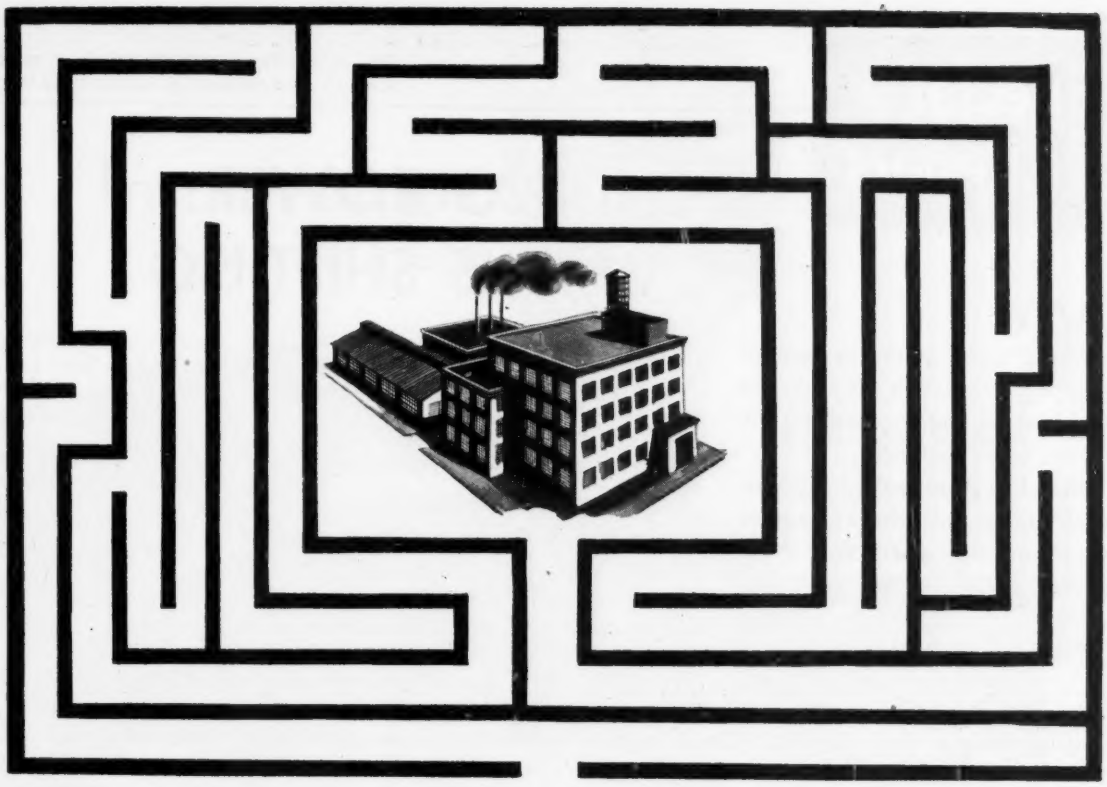
It is this extreme poverty that made Libya a poor risk as a candidate for independence after it was taken from the Italians during World War II.

Some Americans and Britons here still consider Libya a poor risk to stay out of trouble. The reigning monarch, King Idris I, maintains only loose rule over the three provinces. There is always the danger of unrest spilling over into Libya from the Middle East, on one side, or from the French protectorate of Tunisia on the other.

American strategists, however, are counting on continued U. S. and British aid to keep things calm politically in Libya and to develop its economy.

They point out that you don't meet the antiforeign feeling found frequently in other parts of the Arab world. By comparison with next-door Tunisia, or with Morocco, where nationalist uprisings endanger the future of U. S. bases, Libya seems like a stable proposition.

View of American officials is that the West can build up Libya as a political and military friend in the Middle East. As long as the world situation remains as it is, the U. S. and Britain will depend heavily on Libya for bases—and see to it that the desert kingdom stays on its feet.



Want out?

TIMES CHANGE! What once may have been an ideal factory site when grandfather was running the plant can be completely out of step with present conditions. And it's no fun to do business these days surrounded by a bewildering maze of economic handicaps and hardships.

There's a realistic way out of a situation like this—*look South!* You'll find that the modern, industry-minded Southland offers a host of down-to-earth advantages of every kind. Efficient transportation. Intelligent, willing workers. Large and expanding consumer markets. Rich natural resources nearby.

Take a good look at the land of the "new look" in industry. You'll like what you see.

"*Look Ahead—Look South!*"

Harry A. DeButts
President

LOOK SOUTH
LOOK AHEAD

SOUTHERN
RAILWAY SYSTEM
WASHINGTON, D. C.

The Southern Serves the South

Special Report

(This article represents the result of an extensive research on a problem of outstanding importance.)

SPENDING POWER: HOW IT IS SHIFTING

Broad shifts in the pattern of people's incomes in the U.S. are accentuated, not stopped, by the '54 business setback.

Here is a close look at changes now going on—where incomes are increasing, where they show a relative decline.

The way personal income is distributed in this country is continuing to shift under the impact of the 1954 business setback. That shift, broadly, is away from the East and toward the South and West.

People, despite the setback, are going to have a trifle more income in 1954, on the whole, than they had in the boom year 1953. But the pattern of that income is changing, by States and by groups of earners. Some will have considerably more than last year, others considerably less.

Among income groups, those who draw their income from rents, dividends, interest and pensions are to have more this year than last. There is a mild dip in income to the proprietor group, both farm and nonfarm, and in wage and salary payments.

It is the way income is distributed geographically, by States, that attracts the most interest, however.

The map on this page and the table on pages 116 and 117 show what is going on. They are based on official figures just released for 1953 and on estimates by the Economic Unit of *U.S. News & World Report* for 1954. These estimates, pieced together from components that are available officially, give the latest picture of State-by-State shifts.

The trend, over all, is away from the older, established industrial areas, and toward the less populated, less industrially developed regions.

The 14 Northeastern States—east of the Mississippi and north of the Ohio rivers—are the ones to show the biggest relative loss. Where they accounted for 62 per cent of the nation's income in 1929, they now are drawing only 52.8 per cent. This shift in pattern of income has been slow but persistent over the years.

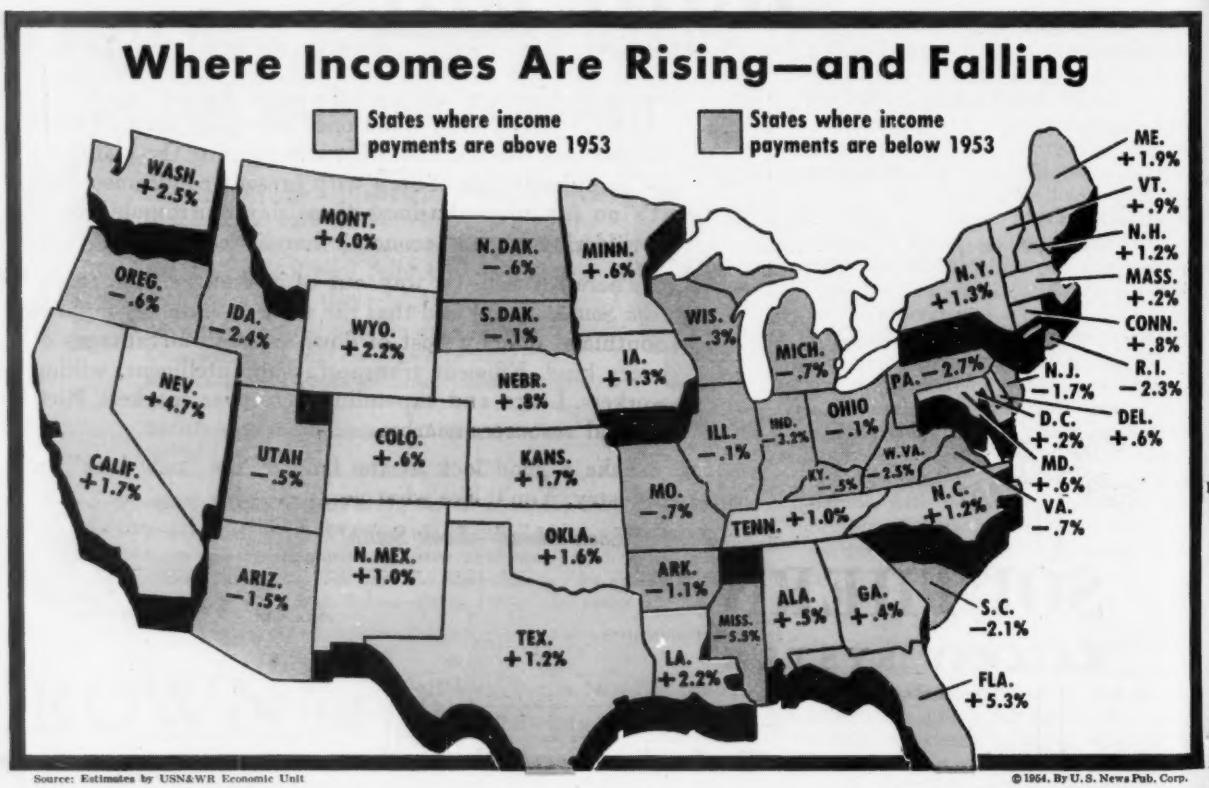
Of the 19 States showing a net increase in wages and salaries this year, all are in the West or South, continuing the pattern of years past.

Region by region, the latest figures show this continuing shift from the years just before the Korean war:

• ***New England,*** which had been losing ground for years in relation to the rest of the country, now finds its income up only 35.1 per cent since 1947-49, as compared with 39.2 per cent for the United States as a whole. Only Connecticut has shown an expansion faster than "normal" during this period, with its income up 48.9 per cent.

• ***Middle Atlantic States***—New York, Pennsylvania and New Jersey—show an

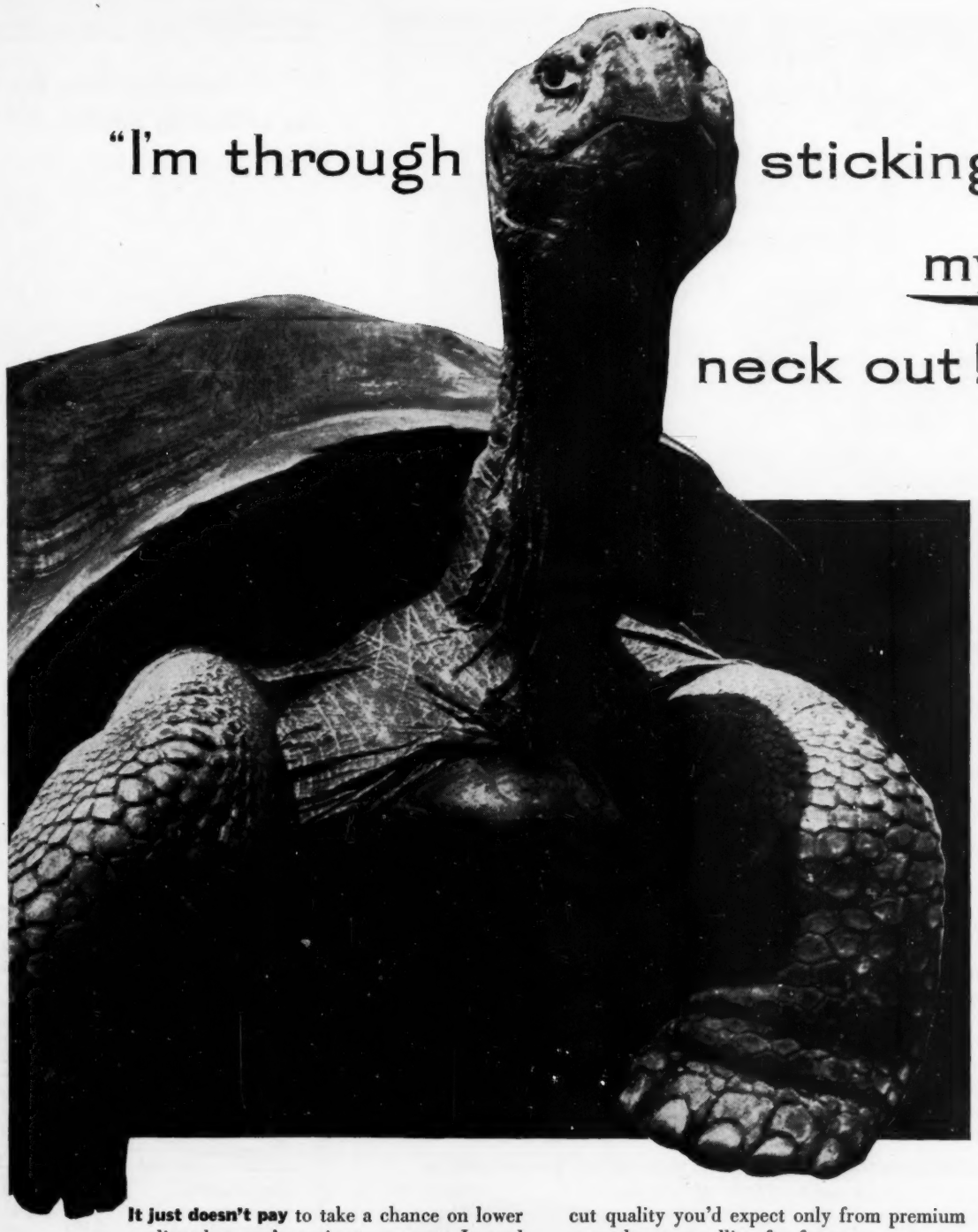
(Continued on page 116)



Source: Estimates by USN&WR Economic Unit

©1954, By U.S. News Pub. Corp.

"I'm through sticking my neck out!"



It just doesn't pay to take a chance on lower quality when you're trying to cut costs. Instead—if smaller printing bills will help—you can keep your neck tucked safely out of the way by simply specifying Consolidated Enamel Papers.

Consolidated Enamels offer savings of 15 to 25% against old style enamel papers simply because Consolidated's modern manufacturing method revolutionized enamel papermaking time and costs. Your company magazine, advertising and sales literature, and other fine printing get the crisp, clear-cut quality you'd expect only from premium enamel papers selling for far more.

Ask your Consolidated paper merchant for the whole story of why Consolidated Enamels are today's best value *regardless* of coating method. Or write on your letterhead for free samples of Consolidated Enamels for a test run.

Consolidated

enamel
printing
papers

production gloss · modern gloss · flash gloss · productolith · consolith

CONSOLIDATED WATER POWER & PAPER CO. • Sales Offices: 135 S. LaSalle St., Chicago 3, Ill.

RAYTHEON CHALLENGER TV

All beauty–All convenience–All picture

"Stand-up" tuning—a Raytheon Challenger *first*—gives you *all* TV controls on top. Smartly styled in eight *decor* colors. Sleek, compact, portable—not an inch of excess bulk, not an ounce of excess weight. You tune big, beautifully clear, deep pictures—all you want for better TV performance.

See this exciting new performer at your nearest Raytheon dealer's—priced as low as $139.95. You'll see why the all-new Challenger TV models typify Raytheon's reputation for... *"Excellence in Electronics."*

RAYTHEON

RAYTHEON MANUFACTURING COMPANY, WALTHAM 54, MASSACHUSETTS

SHAKE TEST—an amazing 10-hour method of factory-testing completely assembled TV set—proves sturdy Raytheon construction and assures satisfaction.

FROM EDGE-TO-EDGE—huge picture almost covers the entire width of the cabinet. Fully and sharply defined—no "dead" screen area. This TV set is all picture.

Southeast near top in rise of buying power . . .

eve bigger lag in income gain than New England, with an increase since pre-Korea years of just 34 per cent, compared with the rise of 39.2 per cent for the nation as a whole. In this area, New Jersey is faring best, New York least well in the steady shifting of income.

• ***The Southeast,*** in contrast, appears now as the fastest-growing region of the U. S. except for the Pacific Coast. The increase since the pre-Korea period amounts to 42.7 per cent, with Florida's income soaring 72 per cent during this period.

• ***The Southwest*** is benefiting somewhat less from the income shift. But its increase since 1947-49 now amounts to 40.8 per cent, slightly above the national average. Only Arkansas is lagging behind, with a scant 20.5 per cent increase in income in that period.

Average personal incomes, rising steadily, still are low in this area. They range from $939 this year in Arkansas to $1,480 in Texas, compared with a national average of $1,709.

• ***The Midwest,*** over all, continues to draw its "normal" share of income, its growth following the national pattern closely. But within this region, income has risen rather rapidly in the eastern

INCOME TRENDS

(total income payments, in millions)

	1947-49 Annual Average	1954 (Est.)
NEW ENGLAND	**$13,142**	**$17,744**
Maine	1,027	1,312
New Hampshire	616	828
Vermont	413	533
Massachusetts	6,762	8,894
Rhode Island	1,113	1,396
Connecticut	3,211	4,781
MIDDLE ATLANTIC	**$46,860**	**$62,796**
New York	25,726	33,918
New Jersey	6,871	9,978
Pennsylvania	14,283	18,900
SOUTH ATLANTIC	**$21,106**	**$30,622**
Delaware	505	830
Maryland	2,995	4,429
D. C.	1,820	2,512
Virginia	3,152	4,380
West Virginia	1,976	2,374
North Carolina	3,343	4,653
South Carolina	1,592	2,352
Georgia	2,914	4,261
Florida	2,809	4,831
EAST NORTH CENTRAL	**$43,917**	**$62,573**
Ohio	11,376	16,822
Indiana	5,103	7,342
Illinois	14,112	18,786
Michigan	8,884	13,621
Wisconsin	4,442	6,002

Source: 1947-49 Commerce Dept.; 1954, est. by USN&WR Economic Unit

. . . The West is having a big boom in income

part, particularly in the industrially expanding States of Michigan, Ohio and Indiana. Less-than-average gains are being shown by predominantly farm States in the Western part.

• ***The West,*** however, is enjoying a big boom in income almost everywhere. Mountain States have increased their collective income by 44.4 per cent since the years just before the Korean war. And Pacific Coast States now show an average increase of 48.3 per cent.

California is getting the biggest dollar increase, with its income up 52.3 per cent since the 1947-49 period and still rising. But bigger percentage increases are showing up now in the more sparsely settled States of Nevada (up 78.3 per cent), Arizona (up 69.2 per cent) and New Mexico (up 66.6 per cent). Only Idaho, with an 18.7 per cent increase, is failing to benefit from this income boom in the West.

Over *all,* the effect of the 1954 business setback on incomes is to accentuate the broad shifts that have been under way in this country for years, with the big benefits going to the Western and Southern areas of the U. S. and the industrial Northeast again lagging behind in income growth.

A State-by-State Picture

(total income payments, in millions)

	1947-49 Annual Average	1954 (Est.)
WEST NORTH CENTRAL	**$17,575**	**$22,413**
Minnesota	3,644	4,751
Iowa	3,332	4,004
Missouri	4,945	6,722
North Dakota	806	799
South Dakota	811	894
Nebraska	1,687	2,081
Kansas	2,350	3,162
EAST SOUTH CENTRAL	**$ 9,061**	**$12,415**
Kentucky	2,451	3,441
Tennessee	2,836	3,988
Alabama	2,362	3,265
Mississippi	1,412	1,721
WEST SOUTH CENTRAL	**$14,855**	**$20,915**
Arkansas	1,472	1,774
Louisiana	2,469	3,682
Oklahoma	2,239	3,033
Texas	8,675	12,426
MOUNTAIN	**$ 6,067**	**$ 8,759**
Montana	813	1,078
Idaho	700	831
Wyoming	397	516
Colorado	1,685	2,381
New Mexico	619	1,031
Arizona	798	1,350
Utah	792	1,103
Nevada	263	469
PACIFIC	**$22,125**	**$32,810**
Washington	3,449	4,778
Oregon	2,075	2,745
California	16,601	25,287
UNITED STATES	**$194,706**	**$271,047**

© 1954, By U. S. News Pub. Corp.

Now! life insurance protection for your family during vital years...

Then all premiums returned *plus* dividends

Yes... **this is now possible through modern life insurance planning with the SUN LIFE ASSURANCE COMPANY OF CANADA, one of North America's leading life companies. The new Sun Life Security Fund "insurance or money-back" plan enables you to provide life insurance protection for your family until you are 65 with a guarantee that, if you live to 65, all the money you paid will be returned to you in full . . . plus accumulated dividends.**

Or... the proceeds at age 65 can be

a) used to provide an annuity;

b) left on deposit with a guaranteed rate of interest;

c) used to purchase a paid-up policy for the original sum assured, with a balance which can be taken in cash or as a guaranteed income.

Call the Sun Life representative in your district for more information about the Sun Life "money-back" plan, or mail this coupon today.

Coupon

To the **SUN LIFE OF CANADA**
607 Shelby St., Detroit 26, Mich.

Without obligation, I would like more details of the new Sun Life Security Fund plan.

Name.....

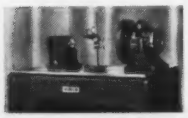
Address.....

.....Age.....

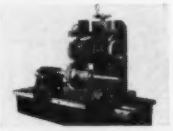
OVER $2¾ BILLION PAID TO POLICYHOLDERS AND BENEFICIARIES SINCE 1871

A Specialist is Your Best Bet

Douglas specialists designed the A4D for mass production. To assure interchangeability of parts, all critical dimensions must be checked with the proper inspection equipment. The inspection equipment designed and built by Vinco specialists is considered the finest for checking gears, cams, camshafts, splines, etc. Use Vinco equipment and learn why a specialist is your best bet.



A Vinco Optical Master Inspection Dividing Head is a "must" for checking angular spacing. Accuracy guaranteed to within 2 seconds of arc. Write for data.



This universal gear rolling inspection fixture checks the concentricity, backlash and smoothness of the rolling action of gears.

Vinco spline gage specialists can save you time and money. Call them in.

Revolutionary techniques in engineering, tooling and manufacture assure quantity deliveries several years earlier than usual.

VINCO CORP., 9109 Schaefer Hwy., Detroit 28, Mich.

VINCO

MILLIONTHS OF AN INCH FOR SALE

TRADEMARK OF DEPENDABILITY ®

Next time—use a ScotTissue Towel!
(Just one does the Job)

SCOTT PAPER COMPANY
Chester, Pa. ScotTissue ®

We've Been Asked:—

WHAT REDS GET IF THEY "TALK"

- **Communists are being asked by FBI to tell what they know about spying activities.**
- **Some immunities are offered to those who help to expose Red conspiracies in U. S.**

What if a Communist comes in now and talks to the Federal Bureau of Investigation? Is he assured of immunity?

A Communist or ex-Communist who comes in voluntarily and co-operates with the FBI in exposing a spy ring is not prosecuted for his former activities under present policy. In fact, the Government is launching a new anti-Red campaign by inviting persons tired of their Communist activities to do just that. The Attorney General says that those who do this have a chance to "redeem" themselves. New anti-Communist laws give further protection to some who testify.

Are some coming in to talk?

Since passage of the new anti-Red laws, with new rules on immunity, more Communists and ex-Communists are reported to be co-operating with the FBI. In addition, the Government is ready to get testimony from some—who heretofore had pleaded Fifth Amendment protection against incriminating themselves—in telling the courts and grand juries about activities of spy rings.

Why didn't more ex-Reds give information before?

For one thing, because of a widespread fear of prosecution for their past activities if they talked. The Attorney General now assures Communists and former Communists that just isn't true. Rather, he says, their assistance would help them to return to their "normal place in society."

Is this going to lead to more waves of revelations?

That's possible. In any event, the Government is prepared to go ahead with use of the new anti-Communist tools supplied by Congress, as well as with existing laws.

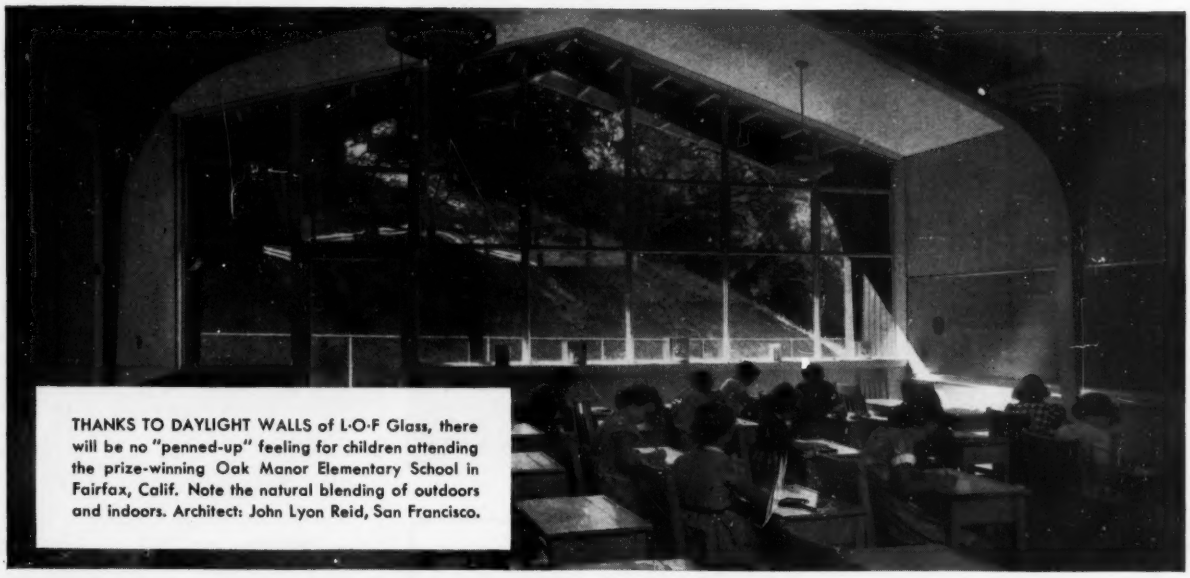
Will those who refused to talk before be given another chance?

Many of them will. This includes some who refused to testify before congressional committees and in courts about activities of Communist groups. Under

(Continued on page 120)

IN *The School Executive's* THIRD ANNUAL COMPETITION FOR BETTER SCHOOL DESIGN

17 OUT OF 17 WINNERS USED MODERN DAYLIGHT WALLS!



THANKS TO DAYLIGHT WALLS of L·O·F Glass, there will be no "penned-up" feeling for children attending the prize-winning Oak Manor Elementary School in Fairfax, Calif. Note the natural blending of outdoors and indoors. Architect: John Lyon Reid, San Francisco.

That's quite a record—out of 139 schools entered, all 7 winning designs and all 10 honorable mentions have daylight walls, windows of clear glass extending from wall to wall and sill to ceiling. It's an indication of a sharp, decisive trend in school design.

In the words of the judges themselves: "Each (of the winners) showed a sensitive relationship between indoor and outdoor surroundings. Each of them used the outdoors to enhance the environment of people occupying rooms. In each of the winners there has been a conscious effort to combat the confining effects of people contained in limiting boxes."

These words reflect the growing enthusiasm of educators all over the country for the use of daylight walls to eliminate "that cooped-up feeling". These daylight walls add a feeling of spaciousness, bring light and view inside . . . make the classroom a part of the world beyond.

School boards like daylight walls, too. They are economical to build (less masonry, lath, plaster and paint). Economical to maintain (glass is easy to clean, doesn't wear out). When glazed with *Thermopane** insulating glass, heating costs are lower and areas close to windows are comfortable on coldest days.

For a more complete story on the use of daylight walls in school design, write for the book described below or call your nearby Libbey·Owens·Ford Glass Distributor or Dealer. *®

Free Book on School Daylighting

You'll enjoy—and get a lot of good ideas from—this 24-page authoritative publication on school daylighting: "How to Get Nature-Quality Light for School Children." For a free copy write Department 4894, Libbey·Owens·Ford Glass Co., 608 Madison Ave., Toledo 3, O.

THERMOPANE • PLATE GLASS • WINDOW GLASS

DAYLIGHT WALLS

. . . THAT LET YOU SEE

OTHER L·O·F PRODUCTS: Vitrolite* • Tuf-flex* Tempered Plate Glass • Tuf-flex Doors Safety Glass • E-Z-Eye Safety Plate Glass • Fiber-Glass • Corrulux*

LIBBEY·OWENS·FORD GLASS CO., TOLEDO, OHIO

Triple threat

PAYLOADER

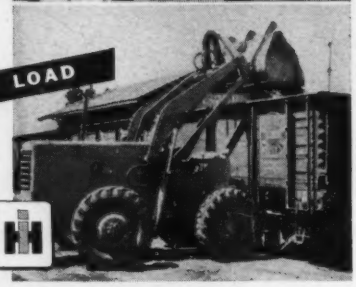
A versatile bulk handler

How many places and times in your plant are bulk materials still being handled and re-handled by slow, laborious methods? . . . unloading boxcars? shoveling up piles? loading trucks, buggies, bins, hoppers? . . . transporting bulk materials?

"PAYLOADER" tractor-shovels do *all* these things — and more — for thousands of plants with great benefits to production and profits.

One man on a "PAYLOADER" can scoop-up, transport and dump a thousand or more pounds of material at a time in one fast, continuous operation to save much rehandling. The big pneumatic tires work on floors or ground.

There is a complete line of "PAYLOADER" units from 12 cu. ft. (1000 lbs.) to 2 cu. yd. (6000 lbs.) capacity to fill your needs, and an established Distributor near you with complete parts and service facilities. He'll be glad to demonstrate. The Frank G. Hough Co., 953 Sunnyside Ave., Libertyville, Ill.



PAYLOADER®
THE FRANK G. HOUGH CO. · LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

California Plants for Sale or Lease

Our INDUSTRIAL SURVEY gives up-to-the-minute facts on plants and plant sites available in Metropolitan Oakland Area, which includes all of Alameda Co., Calif. Also data on warehouse facilities. Sites in urban, suburban and rural areas. Plants to meet your individual requirements built for you on sites you select. Use this free, confidential service to get—all in one place—data otherwise available only from twelve separate sources. In writing, outline your requirements in detail. Also ask for Data Sheets on Climate, Markets, Distribution and Living Conditions.

Free! **"THE MOA SCRAPBOOK" . . . 16 pages of pictures, clippings and personal notes—giving you the easy-to-read type of information you would collect to show to your Directors. Just off the press. Send for your free copy—today. Address: ALAMEDA COUNTY NEW INDUSTRIES COMMITTEE (a non-profit organization representing the entire county) Suite 301, 427 Thirteenth Street, Oakland 12, California.**

We've Been Asked:

. . . Court now can order witness to testify

the new Immunity Act, the Government can force persons claiming Fifth Amendment protection to talk or take the consequences.

How does this new law work?

The law sets up procedure for a Government attorney to go to a district court and get an order that an individual testify about subversive activities. In return, this person is given immunity from prosecution on the basis of his testimony. If he refuses to talk, he can be cited for contempt. And if he gives false testimony, he can be prosecuted for perjury.

Similar procedure is provided for a congressional committee to force a recalcitrant witness to talk when he declines to testify in order to avoid the possibility of incriminating himself. The same assurance is provided of immunity from prosecution for his testimony. This is expected to open the way for Government lawyers, as well as members of Congress, to question—and require answers from—persons who in the past have dodged testifying by citing their constitutional right against self incrimination.

On the other hand, what if a person remains an active Communist? What might he lose?

If exposed, he may lose many privileges, and might even end up in prison. The new laws just passed by Congress, added to existing laws, make it possible for the Government to take additional steps against Communism in the U. S.

What specific privileges might a Communist lose if he becomes known as a Red and refuses to talk?

The laws now bar a Communist from holding a job in the Federal Government or a job involving Government defense contracts. It prevents him from holding office in a labor union or from representing a union in a case before the National Labor Relations Board. In an extreme case, a Communist, whether naturalized or native born, can lose his American citizenship. That would give him the standing of an alien, taking away his privileges of voting, running for public office or holding public office, getting a passport and other things; if foreign born, he could be deported.

Merely being a member of the Communist Party, however, is not a crime. But a member can be required to register with the Government. Failure can bring a prison sentence and a fine.

LIKE A HURRICANE AT YOUR BEDROOM WINDOW!

SURGE – A PROBLEM IN GAS TURBINES

Even light air passing in and out of your bedroom window may cause it to vibrate and rattle. Think how a blast of hurricane strength would shake it!

A problem similar to this faced engineers at AiResearch in the design and construction of gas turbine compressors vital as auxiliary power units for modern jet airplanes.

Air, traveling at hundreds of miles an hour inside a gas turbine, has a habit of suddenly blasting or surging back and forth in a narrow opening. This surging sets up violent vibrations – like a hurricane at your window – that can tear the turbine to pieces, or greatly reduce its efficiency.

Because of more than a decade of experience in the highly specialized field of small turbomachinery, AiResearch engineers were able to design and build a two stage auxiliary gas turbine with controls that eliminate *surge* over a broad range of operation. Simple and reliable, this gas turbine is in operation *now* when it is critically needed.

This is another example of how the AiResearch team – through research, engineering and manufacturing – is solving tomorrow's problems today in many complex fields.

AiResearch Manufacturing Company, Los Angeles 45, California, and Phoenix, Arizona.

AiResearch

A division of **THE GARRETT CORPORATION**

Designers and manufacturers of aircraft components:

REFRIGERATION SYSTEMS • PNEUMATIC VALVES AND CONTROLS • TEMPERATURE CONTROLS

CABIN AIR COMPRESSORS • TURBINE MOTORS • GAS TURBINE ENGINES • CABIN PRESSURE CONTROLS • HEAT TRANSFER EQUIPMENT • ELECTRO-MECHANICAL EQUIPMENT • ELECTRONIC COMPUTERS AND CONTROLS

More schools...faster...for fewer tax dollars!

Educators say our nation's schools must have at least ¾ million new classrooms by 1960. School boards agree, but view rising construction costs with dismay. Yet, in many communities with progressive building codes, the answer has been found—school buildings featuring aluminum construction!

Alcoa has demonstrated that exterior wall panels of aluminum—shop fabricated, easily fitted into place—help buildings grow faster, more economically. Minimum wall thickness means more inside space. Light weight permits economies in foundations and supporting members. Maintenance costs are practically eliminated. Beauty, too, is built in with Alcoa® Aluminum.

A fine example of the modern school building built of aluminum will be the new Northwest Senior High School, Milwaukee, Wis. Check a local architect or builder to see what you as a taxpayer would have had to pay to build this school in your town under your building codes. Ask yourself if building with modern materials and methods isn't the best way of reducing construction costs and taxes in your community. ALUMINUM COMPANY OF AMERICA, 2199-J Alcoa Building, Pittsburgh 19, Pa.

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Architect: Grassold-Johnson & Associates, Milwaukee, Wisconsin

Appl. for Trade-Mark Reg. Pend.

News YOU Can Use

24th and N Streets, N.W.
Washington, D. C.

This picture of medicine's latest findings about heart disease comes from a meeting, held in Washington, of heart specialists from all over the world:

HEARTS AND DIETS. People in the U.S. have the highest death rate from heart attacks of any nation in the world. And what they eat may be a major cause, doctors attending the Second World Congress of Cardiology suggest. Experts from nearly a dozen countries reported increasing evidence that diet--especially fatty foods--seems involved in producing artery changes that lead to heart attacks. Americans, they add, eat more fats than other people.

But the artery change isn't inevitable and may be reversible, a team of Chicago specialists say. New experiments create hope that giving people female sex hormones may cause the changes to disappear, they report.

MEDICAL REPORTS. Three out of four heart-attack victims can go back to work and actually be better for it, the Congress was told. Other reports:

Hearts can be allergic to aspirin, tobacco, pollen, penicillin, some foods, bacterial infections and other agents. Pain and illness may result.

Better control of heart-crippling rheumatic fever could come from discovery that a substance turned loose by "strep" throat may be the disease's cause.

Plane travel is safe for most people with heart disease.

Replacing defective heart valves with plastic balls now is possible.

A new chemical test can rule out heart damage when present methods give uncertain results--thus saving suspected victims weeks of unnecessary invalidism.

TAX BREAK. Retired people who rent out rooms in their homes, or have other rental income, get a windfall from a quirk in the new tax law. Here's how:

The law sets up a special tax credit on retirement income, and its wording lets rents "included in gross income" count as retirement income. Thus, whatever rents you receive, up to a $1,200 limit, can be counted in figuring the retirement income tax credit. Yet you still are able, in figuring your income tax, to offset rental income by such things as depreciation, taxes, repairs and commissions. In this way, you may be able to qualify for the maximum retirement income tax credit with little or no net rental income actually subject to tax.

VALUING A HOME. Can the ordinary person, if he's thinking about selling his home, get the Federal Housing Administration to appraise it for him?

Indirectly, yes. He would have to apply through a bank or other lending

(over)

agency for an FHA "conditional commitment." That costs $20, shows the maximum mortgage the FHA will insure on the home, and the appraisal value. But it often takes weeks to get. Another way is to hire a professional appraiser. Cost would vary, depending on what's involved in the appraisal. Some appraisers charge $100 a day for their time.

PENSIONS. To answer a question on the new Social Security law:

Clergymen must ask to be included in the program by filing a certificate with the Internal Revenue Service. If that's not done by April 15, 1956, they'll be unable to get credit on 1955 incomes. If not done by April 15, 1957, they lose out on the program for good. A leaflet telling how the law applies to the clergy can be had from the Social Security Administration, Department of Health, Education and Welfare, Washington 25, D.C.

EMBEZZLED FUNDS. If someone makes off with money belonging to you, is he liable for income tax on his ill-gotten gains? And does the tax collector's right to the tax have priority over your rights to recovery of the funds? There's a case in point in a decision by the Fourth Circuit Court of Appeals.

The Court explains that embezzled funds are not taxable to the person who obtains them, but extorted funds are. The distinction can be a fine one, but, in general, says the Court, they are taxable in situations where the person misappropriating them had the owner's authority to use them as if they were his own.

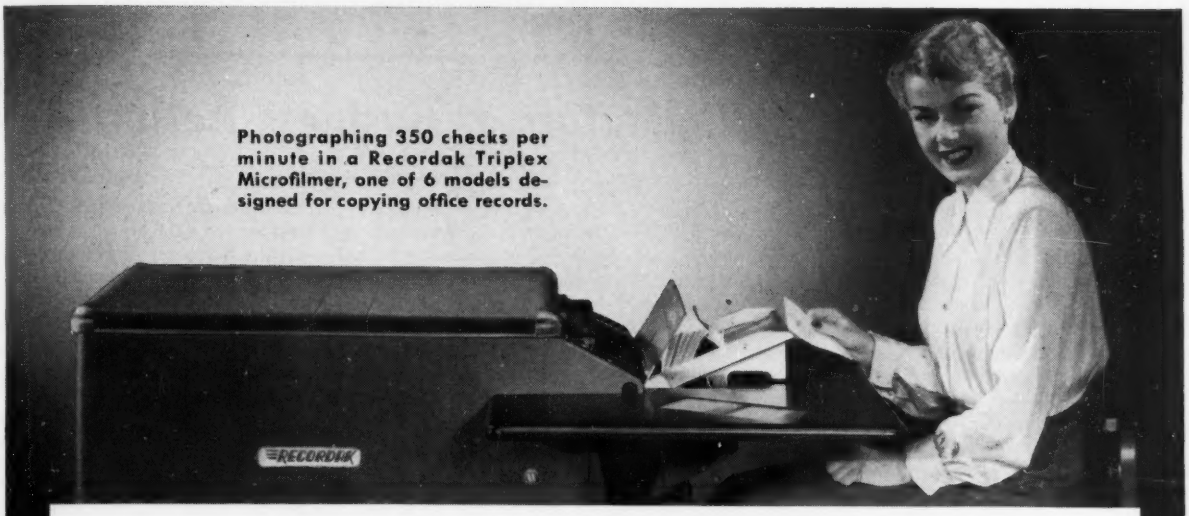
As to recovery, the common belief that the tax collector always comes first isn't necessarily true. If the victim gets his legal claim in first, he ordinarily would have priority over the tax collector.

CHRISTMAS MAIL. Your Christmas parcel to a serviceman overseas should be mailed between October 15 and November 15 to get there on time, the Post Office Department warns. Check your postmaster for mailing restrictions.

CAREER TIP. Note this if your teen-age daughter is thinking about a career. Dr. Lall G. Montgomery, of the Board of Registry of Medical Technologists, says only half as many trained people as are needed are being turned out in this field. Medical technologists do vital laboratory work in clinics, hospitals, offices, and research institutions. Qualities needed: an interest in science, manual dexterity and patience.

CHILDREN'S EYES. School's start usually means eye checkups for many youngsters. But equally important, says the National Society for the Prevention of Blindness, are checkups for preschool children--one of four of whom has an unsuspected eye defect. It advises eye examinations before the age of 3--and to watch for these signs of eye trouble: rubbing eyes excessively; tilting head when viewing things; tripping over small objects; recurring sties; crossed eyes --which, despite popular belief, cannot be outgrown.

FROZEN MEALS. If you're fixing meat pies for your freezer, leave vegetables undone and crusts unbaked. Results are better that way, a new U.S. Agricultural Research Service booklet suggests. It also offers other tips, can be obtained, free, from the Office of Information, Department of Agriculture, Washington 25, D. C. Ask for "Freezing Combination Main Dishes."



Photographing 350 checks per minute in a Recordak Triplex Microfilmer, one of 6 models designed for copying office records.

To cut your costs . . .

Look to these everyday uses of Recordak Microfilming

Recordak Microfilming does much more than provide valuable extra protection and save up to 99% in filing space. It is being used today by over 100 different types of business . . . thousands of concerns—

☐ **To eliminate** costly manual transcription in daily routines. Cost studies show that, even where a few words are transcribed from one record to another, Recordak Microfilming saves time and dollars.

☐ **To get** a photographically accurate and complete record of checks prior to deposit in your bank. Time-consuming description is eliminated . . . errors, too.

☐ **To speed** data to other offices . . . allowing tighter control . . . eliminating manual transcription and mistakes.

☐ **To photograph** punched card reports. No need to produce them in duplicate—Recordak Microfilm copies cost less than carbons.

☐ **To make** a photographic record of any document in the fastest time and at lowest cost. Up to 250 letter-size documents or 500 check-size ones can be copied in a minute.

☐ **To cut** posting operations 85% in billing departments.

☐ **To speed** reference. No problem when data must be added periodically—Recordak Microfilming and Filmsort cards work hand in hand to simplify any job. (Recordak is an authorized Filmsort distributor.)

It will certainly pay you to double-check your routines with a Recordak Systems Man soon. Write Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Avenue, New York 22, N. Y.

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—and its application to business routines

"Recordak" is a trade-mark

PLUS & MINUS
Latest Indicators of Business Activity

The usual rise in business activity after the summer holidays is being obscured this year by the early shutdowns for model change-overs in the auto industry. Over-all measures of production and employment have remained stable. When full auto output resumes, trends will be watched for greater-than-seasonal strength.

Industrial production was unchanged in August, at 124 per cent of the 1947-49 average. Small advances in factory output developed despite the auto slowdown and strikes in rubber and lumber. Increases were common outside these groups, especially in machinery, textiles, apparel and chemicals. Reduced minerals output offset the factory gains.

General improvement in the period ahead is suggested by reports of rising new orders. Much new demand is becoming active because inventories have been worked down substantially. Confidence is bolstered by firm consumer demand, high incomes and stable prices.

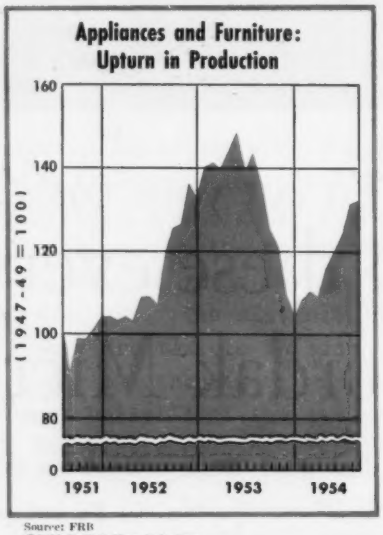
Steel orders are rising and beginning to stimulate production, which is now more than 66 per cent of capacity, highest since late June. Output averaged less than 64 per cent in the seven weeks preceding mid-September.

Textile orders are larger in all categories except woolens and worsteds, New York firms report.

Paperboard orders, a good trend indicator, were the highest of the year in the week before Labor Day. Unfilled orders in mid-September, up 17 per cent since the end of June, were the highest since March.

Business inventories were reduced 600 million dollars in July, largest of 10 successive declines which cut stocks by 3.6 billion, to 78.4 billion. Principal trimming was in durable-goods stocks, which now stand at the lowest level since year end, 1952.

Appliance and furniture industries, lagging for several months, are becoming a supporting factor now. When consumer demand slipped moderately in 1953, retailers cut orders sharply because of large stocks. Producers responded with a 30 per cent reduction in output. Improvement came early this year, and the trend has been climbing since March, as the top chart shows.



Source: FRB
© 1954, By U. S. News Pub. Corp.

In aggregate, production of home appliances, furniture and floor coverings in August was 27 per cent above December and up for the fifth successive month from March. Retail inventories were the lowest in two years.

Television has been the leader. August production was the highest in 10 months. Retail stocks, around 800,000 units, are 100,000 below a year ago.

Refrigerator production has shown irregular improvement in recent months, and in August was above a year earlier. Producer stocks are the lowest of the year, 20 per cent below March.

Freezer production has run below 1953, but stocks have been cut to the lowest level since early 1953. Latest reported sales are above a year earlier.

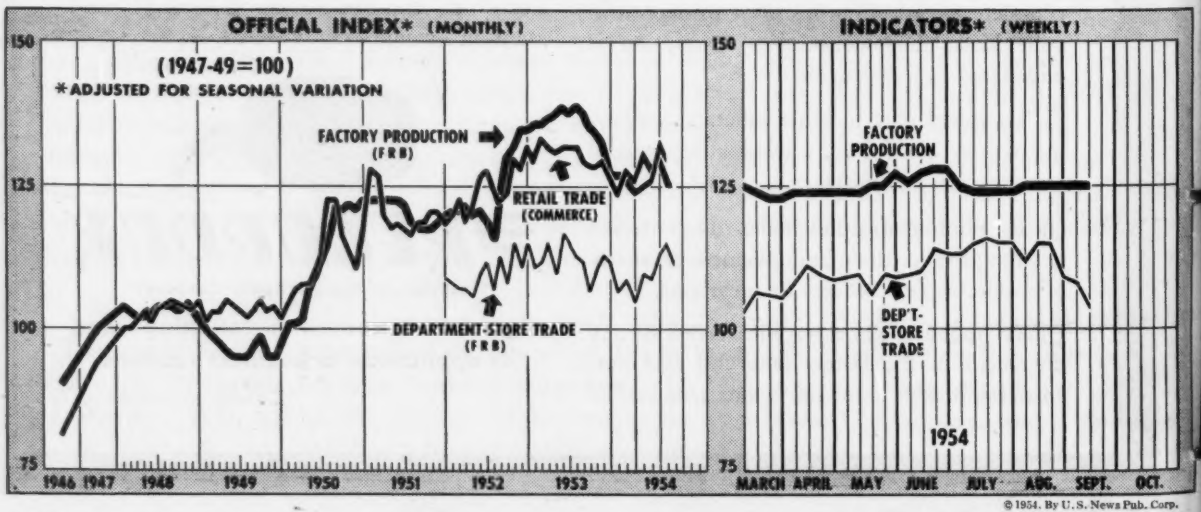
Washing-machine production has been curtailed, allowing a 150,000 reduction in factory stocks since April, to 500,000 units. This is still as high as a year ago, but recent sales have passed the level of a year earlier.

Ironer production also has been held down, and sales remain slow. But factory stocks have been slashed to 40,000 units from 65,000 a year ago.

Heating and cooking-stove inventories are as high as last year, but sales have improved recently and production has picked up moderately.

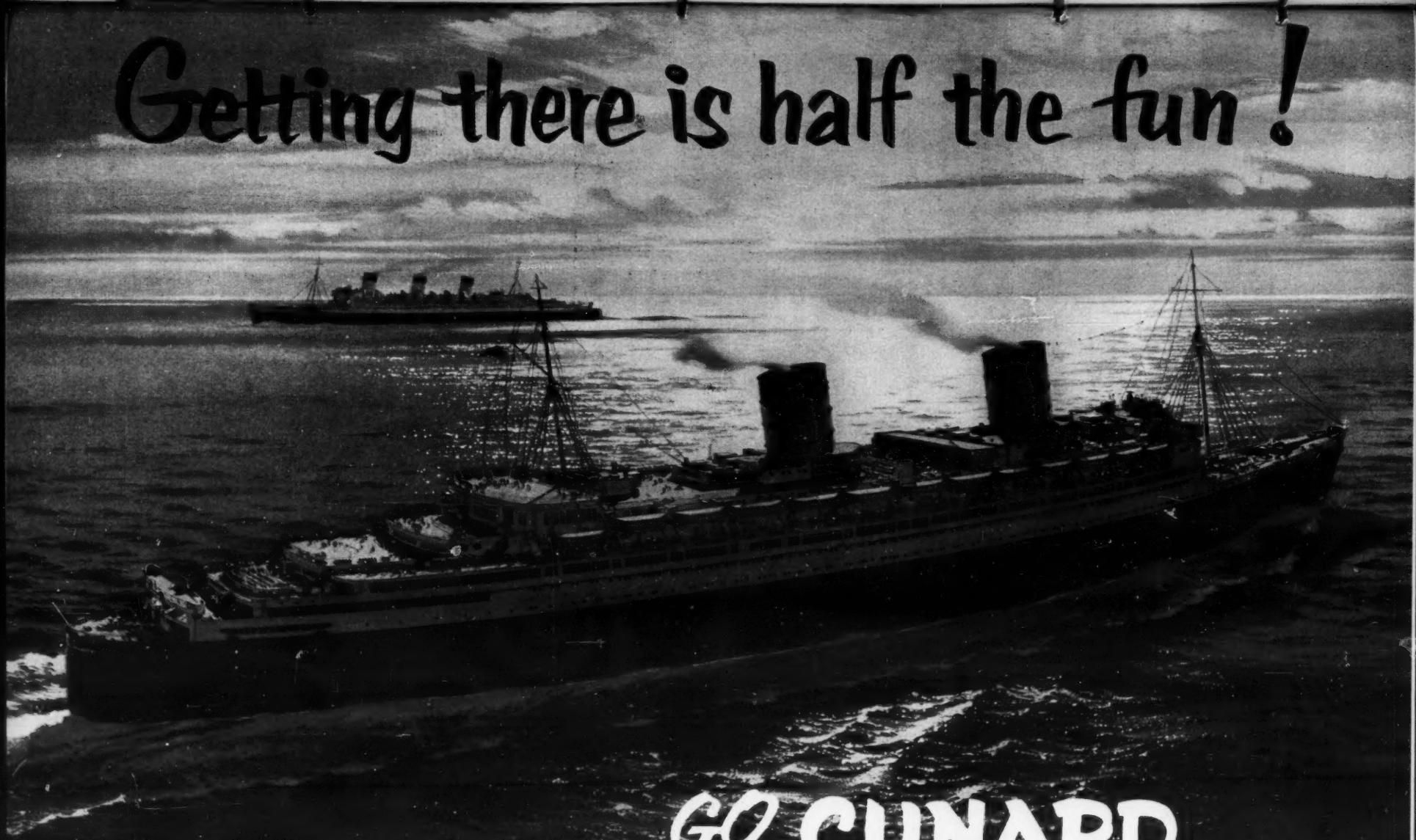
Residential-construction boom is adding to appliance demand. Housing starts in August are estimated close to the July total and 16 per cent above last August. Home-loan applications to the Veterans' Administration were the fifth largest on record. At 59,490, they were 13,904 above July and 28,233 above a year earlier.

Auto-industry gains when full output is resumed are hinted by Chrysler's plan to employ 84,400 production workers —compared with 54,100 in the period before the shutdown occurred.



© 1954, By U. S. News Pub. Corp.

Getting there is half the fun!



See your Cunard-authorized Travel Agent and..

GO CUNARD

QUEEN ELIZABETH · QUEEN MARY · MAURETANIA · CARONIA · BRITANNIC · MEDIA · PARTHIA · SAXON · FRANCONIA · SCYTHIA · SAMARIA · ASCANIA

An 18 x 22" color reproduction of this painting of the Queen Elizabeth and Queen Mary, by for the world's largest superliners (without the advertising text and suitable for framing) will be sent upon request. Write Cunard Line, 25 Broadway, New York 4, N.Y.

Case of the Vanishing Gold

WHEN you hear about some gold vanishing, burglars and boudoirs are often brought to mind. But in this case the victim is no lady. It's industry.

In smelting plants, where gold is refined, there's plenty of dust. No ordinary dust, this. It's laden with gold. But like all dust it blows away. And with it goes the gold.

An Electrostatic Precipitator, made by Koppers, can "catch" these precious particles of gold. With a Koppers Precipitator, even particles that are smaller than a millionth of an inch can be arrested . . . and held.

Besides retrieving gold or silver, a Koppers Electrostatic Precipitator can recover many other valuable substances that normally would be completely lost. Such as soda ash in paper mills. And expensive materials used in process gas.

A Koppers Precipitator has other important applications. For example, it traps dust, ash and other contaminants that otherwise would pollute the atmosphere. These precipitators are clearing the air for many communities, making them more healthful to work and live in.

If you have a recovery or nuisance abatement problem, get in touch with us. An analysis and recommendation will be given. No obligation, of course. Koppers Company, Inc., Precipitator Department, Baltimore 3, Maryland.

KOPPERS®

ELECTROSTATIC PRECIPITATOR

Another Koppers Product

Making precipitators is just one way in which Koppers serves industry and you. Among its many products are chemicals, plastics, pressure-treated wood, road materials, protective coatings, creosote, flexible couplings, industrial fans and piston rings. Koppers also designs and constructs coke ovens and integrated steel plants.

KOPPERS COMPANY, INC., PITTSBURGH 19, PENNSYLVANIA

Scandal in Welfare Funds —Where the Money Goes

Union welfare funds, investigators are finding, sometimes are used to line the pockets of those who manage them.

Big salaries, fat expense accounts, paid Florida vacations are among abuses coming under official scrutiny in New York.

Congress, with two committees active, is about to do some looking, too. It's a fertile field, with big money involved.

NEW YORK

A series of scandals in the handling of union welfare funds is being uncovered in New York State, where workers are highly organized. Officials of some small, obscure local unions are shown to be managing their funds in a way that is proving highly profitable to them and their relatives.

Stories of high living on welfare-fund money are appearing in official testimony. These stories tell of Cadillacs, fat expense accounts, retirement annuities and expensive vacations. In one case, the president of a small union got more pay than the president of the CIO. Testimony showed that one welfare fund, which collected $702,000 from employers in four years, went "broke" after the fund's manager bought property from his cousin for a union vacation resort.

Rank-and-file workers, meanwhile, sometimes were being denied the benefits they had been promised.

Cases just cited are from testimony in hearings being held before New York's State Insurance Superintendent, Alfred J. Bohlinger. His office examined 145 welfare funds of the 600 operating in New York State. Of those examined, investigators reported 21 were badly mismanaged. Forty-one others were criticized. No fault was found with the management of a large majority of the funds. But investigations covering other areas are about to be started by two committees of Congress.

What Congress and the States want to know is whether abuses in welfare funds are so widespread as to require regulation by law. These funds involve really big money, most of it contributed by employers. It is estimated that managers of these funds, most of whom are union

(Continued on page 130)

–N.Y. Daily News Photo from Gilloon Agency

INSURANCE SUPERINTENDENT BOHLINGER & COUNSEL GELB
They found some fund administrators were living high

It's good business to stay at NEW YORK'S

Hotel **Biltmore**

...just *minutes* from all your business appointments

...close to better shops and major entertainment centers

AIR-CONDITIONED ROOMS & SUITES

•

6 EXCELLENT RESTAURANTS

MADISON AVENUE
at 43rd St., New York
Private Elevator from Grand Central Terminal
Teletype: NY 1-3494

Frank W. Regan, *President*
David J. Martin, *Vice President*

A NEW LOOK FOR EXECUTIVE CORRESPONDENCE!

AT LOW COST... with the

Smith-Corona

"Eighty-Eight"

Carbon-Ribbon Typewriter

SEE the crisp, clean, print-perfect quality of the new Smith-Corona *Carbon-Ribbon* "write." It's distinctive, impressive, sharp and even, and at the same time warm and friendly. Each letter makes its impression through a fresh ink-area of the *Carbon-Ribbon*.

CALL ANY SMITH-CORONA FULL-LINE DEALER OR BRANCH OFFICE
(See your Classified Telephone Directory)

Smith-Corona Inc Syracuse 1 N Y Other factories in Toronto, Brussels, Johannesburg. Makers also of famous Smith-Corona Portable Typewriters, Adding Machines and Cash Registers, Vivid Duplicators, Carbons and Ribbons.

New Aeroquip 617 Hose and Fittings Save Up to 150 lbs. per Plane

Weight reduction is a constant goal of aircraft engineers. That's why Aeroquip developed a new, extra-short fitting using less metal . . . a new type hose with a thinner wall. Result: substantial weight savings in aircraft fuel, oil, vent and drain lines with NO sacrifice in performance. This is an example of how Aeroquip anticipates the needs of the industries it serves.

Aeroquip

FLEXIBLE HOSE LINES with detachable, reusable fittings

AEROQUIP CORPORATION, JACKSON, MICHIGAN

you should know

In INDUSTRIAL COLORADO manufacturing is the second largest industry!

SITE FACTS:
Write for Free
36-Page Analysis
"Industrial Colorado"

Colorado Department of Development
10 State Capitol
Denver 2, Colo.

COLORADO CLIMATE...THE MAGIC INGREDIENT

fly S·A·S to the

NEAR EAST

ISTANBUL • CAIRO
BEIRUT • DAMASCUS
TEHERAN

S·A·S serves all the Near East. Fly the Royal Viking, first in first class luxury.

SPECIFY S·A·S ALSO TO
TEL AVIV • YAFO • ABADAN
KUWAIT • DHAHRAN • BAGHDAD
See Your Travel Agent

S·A·S
SCANDINAVIAN AIRLINES SYSTEM

offices and agents in all major cities of the world.

One welfare-fund head has a job for life . . .

officials, have more than 20 billion dollars at their disposal.

Here, from the New York hearings, are examples of what is going on in the management of some of these funds:

Gifts and annuities to union officials, from welfare funds, are shown by the testimony to be fairly common. Local 394, United Auto Parts, Tire and Accessory Workers Union, a CIO affiliate, with 400 dues-paying members, paid $26,572 in three years, 1947, '48 and '49, to buy annuities for the union president, Robert M. Stanlea, and the secretary-treasurer, Vincent J. LaGuardia. In the same period, the fund paid $31,901 in insurance benefits for union members.

Mr. Stanlea was suspended by the CIO Retail, Wholesale & Department Store Union, parent body of Local 394, after this disclosure.

In the case of another affiliate of the Department Store Union, Local 377, United Service Employes, the welfare fund expenses included a $4,100 Lincoln for the union president, Ernest J. Dumas, and $4,667 in "gifts" to union officials.

Mr. Dumas also has been suspended by the parent CIO union.

A "broke" welfare fund was described at the hearing. This fund has collected $702,357 from employers, but has been unable to pay any insurance benefits to workers since last May.

The fund, belonging to Local 805, Confectionery and Tobacco Drivers and Warehousemen's Union, an AFL affiliate, is administered by the local's vice president, Abe Gordon. An agreement with the employers gives him the job of administering the fund for life, with a salary of 10 per cent of all fund contributions, plus 2 per cent for expenses.

Last year, testimony showed, the welfare fund bought a property from Mr. Gordon's cousin for $85,000, to be used as a vacation resort. The cousin had paid $11,000 for the property in 1944 and it was assessed at $10,500 in 1953. A local tax assessor described the property as now being worth, at most, $25,000. According to the assessor, a large part of the 490-acre tract is located on a steep mountainside and another part is in a swamp.

Altogether, this union's welfare fund has spent $161,000 developing the vacation retreat.

Testimony also showed that administrative expenses of Local 805's welfare fund have been about 30 per cent of total contributions.

Club dues were paid by another welfare fund for a prominent union official.

. . . High salaries defended by a fund administrator

An accountant for the Seafarers' International Union, AFL, testified that in 1953 the welfare fund of the Atlantic and Gulf District of the SIU paid a total of $4,583 in golf and lunch-club dues for Robert T. Creasy, head of the fund.

The accountant testified that Mr. Creasy was paid $2,439 for "incidental expenses." Mr. Creasy, an Assistant Secretary of Labor in the Truman Administration, administers the welfare funds of four other maritime unions.

Vacations at welfare-fund expense were described in testimony on Local 1115, Restaurant, Luncheonette and Soft Drink Employes Union, another affiliate of the Department Store Union.

Michael Werner, president of Local 1115, and Michael Sackman, secretary-treasurer, administered the union's welfare fund. From 1951 through 1953, the fund took in $655,561, while administrative expenses amounted to $221,314.

The two men received yearly salaries of $13,000 each from the fund, plus weekly expense accounts of $65, in addition to their salaries as union officers. During 1950 and 1951, they took bonuses of $10,000 each, in lieu of salary. An accountant who examined the books said both men told him they had used union cars—a Cadillac, a Packard and a Buick—to vacation in Florida, the Catskill Mountains and Atlantic City.

Mr. Werner, according to the testimony, said that his last Florida vacation extended from December to April.

Mr. Gelb showed in this case, as in the case of other welfare funds, that the administrators had "cemented" themselves into their jobs. The executive board of Local 1115 adopted a resolution in 1949 providing that both Mr. Werner and Mr. Sackman could have a succession of 10-year terms, and could be ousted only upon petition of two thirds of the local's members.

Both of these officials have been suspended by the parent CIO union.

High salaries for welfare-fund administrators were defended by Samuel Rosenzweig, president of Local 923, United Culinary, Bar & Grill Employes of New York, still another affiliate of the Department Store Union.

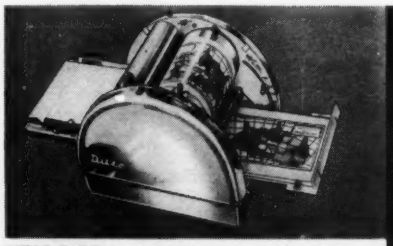
In four years, Mr. Rosenzweig was paid a total of $79,235 by the welfare fund, in addition to his regular union salary of $13,000 per year. His total compensation thus amounted to about $33,000 a year, on the average.

This pay exceeded that of Walter Reu-

(Continued on page 132)

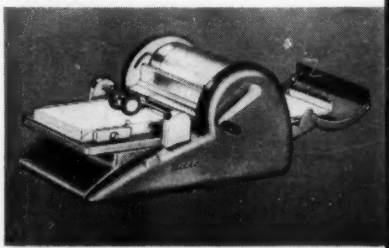
NOW DITTO HAS 3

in the low-priced duplicating field!



DITTO D-11 Automatic Electric Liquid Duplicator with touch-button control for the busy office.

DITTO D-10 Liquid Duplicator. America's most popular duplicator, priced to meet any budget-minded need.



DITTO D-15 DeLuxe Liquid Duplicator—Smartly styled with functionally designed cover that becomes receiving tray. Extra features for unmatched performance.

All make 120 bright copies a minute . . . of anything typed, written, drawn or printed . . . in 1 to 5 colors at once!

Take your choice of any one of America's three finest, easiest-operating, low priced duplicators. Each gives you highest quality, distinct reproduction, in five vivid colors if you like, at a cost of a few cents per hundred copies. Each is precision made to give unequalled performance year after year. Nothing complicated—no stencils, mats, inking, or make-ready. You just type, write or draw, as you ordinarily would, except that you do it on a DITTO master sheet. Then just snap the master on your DITTO and out come bright copies of your work at a speed of 120 per minute. Any weight of paper or card stock may be used; Any size sheet from 3 x 5 to 9 x 14. (Larger sizes on larger machines). Send in the coupon today for full information on the famous DITTO Duplicators.

DITTO® INC.

Used in more than 300 lines of business

Sales Letters	Blank Forms	Radio Scripts
Bulletins	Sketches	Drawings
Maps	Statements	Examination
Price Sheets	Specifications	Questions
Menus	Graphs	News Releases
Quotations, Bids	Contracts	Lesson Sheets
Postcards	Music Scores	Reports
Estimates	House Organs	Addressing
	Notices	

DITTO, Inc. 2249 W. Harrison St., Chicago 12, Ill.
In Canada: Ditto of Canada, Ltd., Toronto, Ont.
Gentlemen: At no cost or obligation please send more information on:

☐ DITTO D-11 ☐ DITTO D-10 ☐ DITTO D-15
☐ Arrange a free demonstration for me in my office.

name_____

company_____

address_____ zone_____

city_____ county_____ state_____

This advertisement is neither an offer to sell nor a solicitation of an offer to buy any of these securities. The offering is made only by the Prospectus. This is published on behalf of only such of the undersigned as are registered dealers in securities in the respective States.

New Issue — *September 14, 1954*

$65,000,000

Tennessee Gas Transmission Company

4¼% Debentures due September 1, 1974

Dated September 1, 1954 — Due September 1, 1974

Price 102%

and interest accrued from September 1, 1954 to date of delivery

Copies of the Prospectus may be obtained from any of the undersigned who are qualified to act as dealers in the respective States.

Stone & Webster Securities Corporation — White, Weld & Co. — Halsey, Stuart & Co. Inc.

Blyth & Co., Inc. — Eastman, Dillon & Co. — The First Boston Corporation

Glore, Forgan & Co. — Goldman, Sachs & Co. — Harriman Ripley & Co. Incorporated

Kidder, Peabody & Co. — Lehman Brothers — Merrill Lynch, Pierce, Fenner & Beane

Paine, Webber, Jackson & Curtis — Salomon Bros. & Hutzler — Smith, Barney & Co.

Union Securities Corporation — A. C. Allyn and Company Incorporated

American Securities Corporation — Bear, Stearns & Co. — A. G. Becker & Co. Incorporated

Blair & Co. Incorporated — Central Republic Company (Incorporated) — Clark, Dodge & Co. — Coffin & Burr Incorporated

Dick & Merle-Smith — Drexel & Co. — Equitable Securities Corporation

Hallgarten & Co. — Hemphill, Noyes & Co. — Hornblower & Weeks

Ladenburg, Thalmann & Co. — W. C. Langley & Co. — Lee Higginson Corporation

F. S. Moseley & Co. — R. W. Pressprich & Co. — L. F. Rothschild & Co.

Wertheim & Co. — Dean Witter & Co.

MOVING SOON? Surely you do not want to miss even one copy of this up-to-the-minute-news magazine. Help us to keep you well-informed about the fast-moving news events of the world by sending us your change of address at least two weeks prior to the time the change is to become effective. And please send your *old* address as well as the *new* address to which this useful news magazine should be sent. Help us to serve you promptly.

U. S. NEWS & WORLD REPORT *Circulation Department* 435 PARKER AVE., DAYTON 1, OHIO

PERSPECTIVE

No matter how you look at it, even a long stay here seems all too short.

CHALFONTE — HADDON HALL
on the Boardwalk, Atlantic City, N.J.
Owned & operated by Leeds & Lippincott Co. for 64 years
Write for illustrated folder

PACIFIC GAS and ELECTRIC CO.

DIVIDEND NOTICE

Common Stock Dividend No. 155

The Board of Directors on September 8, 1954, declared a cash dividend for the third quarter of the year of 55 cents per share upon the Company's common capital stock. This dividend will be paid by check on October 15, 1954, to common stockholders of record at the close of business on September 27, 1954. The Transfer Books will not be closed.

K. C. CHRISTENSEN, Treasurer

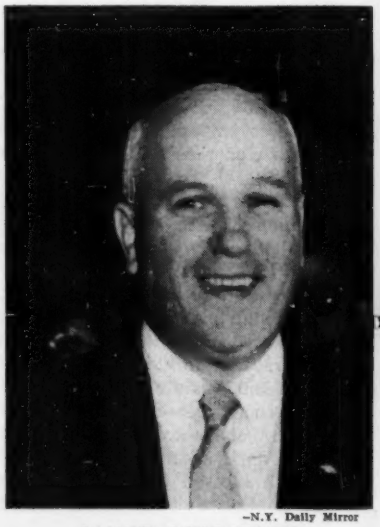
San Francisco, California

Two sons and a daughter of fund head on pay roll . . .

ther, CIO head, who draws $18,000 a year, and it nearly equaled that of George Meany, AFL president, who is paid $35,000.

Mr. Rosenzweig contended that his salary was not excessive in view of the work load. He said that "good administrators deserve good pay," and added, "I'll say publicly there's nothing to running a union today but handling the welfare fund."

This union, the testimony brought out, has a "board" of three employers and three workers assigned to supervise the handling of the welfare fund. Under questioning, Mr. Rosenzweig said the minutes for the board's annual meeting



—N.Y. Daily Mirror

SAMUEL ROSENZWEIG
. . . heads a Bar and Grill local

are typed in advance, always including a statement that the board found "everything satisfactory."

Mr. Rosenzweig also has been suspended by the Department Store Union.

A union official's family shared in both the "expenses" and benefits of the welfare fund of another Department Store local, G. D. Procopio, manager of the welfare fund of Local 563, Shoe Service Union, with 800 members, testified he received a weekly salary of $190, plus $50 for expenses. His son Frank got $120 weekly; his daughter Elvira $75 a week; and his son Mario served as attorney for the local and the welfare fund, receiving an undisclosed amount.

Mr. Procopio acknowledged that, in addition to his salary, he received $6,068 in direct benefits from the fund, be-

. . . Investigations now on in West Coast cities . . .

tween June 1, 1948, and Aug. 1, 1953. He too has been suspended from his job by the parent CIO union.

An insurance-company tie-in with welfare-fund administration was revealed in the case of Local 804, of the International Brotherhood of Teamsters.

Testimony showed that Joseph Garbera, brother-in-law of the union president, Leonard Geiger, had received $38,062 in commissions and dividends from the insurance agency that wrote most of the insurance policies bought by Local 804 for its members. The head of this insurance agency was sentenced to jail last January for refusing to tell a grand

—N.Y. Daily Mirror

LEONARD GEIGER
. . . heads a Teamsters' local

jury how he spent $50,000 on entertainment in connection with his efforts to get business from welfare funds.

More disclosures about the way union funds are operating across the nation are expected.

An investigation of West Coast funds is due to open this week in Los Angeles, before a House Labor Committee.

Investigators of a Senate Labor subcommittee have been gathering evidence in San Francisco, Chicago and Philadelphia, and this group will open public hearings later this year.

Spokesmen for both labor and industry have said it is time for closer controls in the multibillion-dollar welfare funds. The record from New York State's investigation shows why there's growing concern over the funds' operations.

the MO-PAC EMPIRE spells...

INDUSTRIAL OPPORTUNITY!

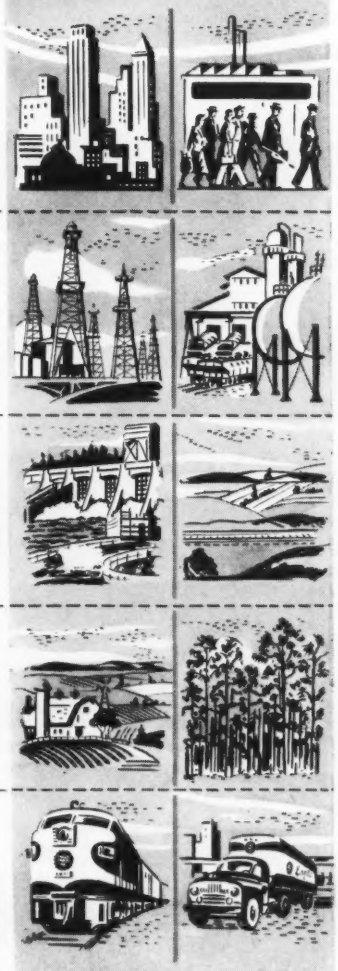
M ARKETS and MANPOWER

O IL, COAL, and NATURAL GAS

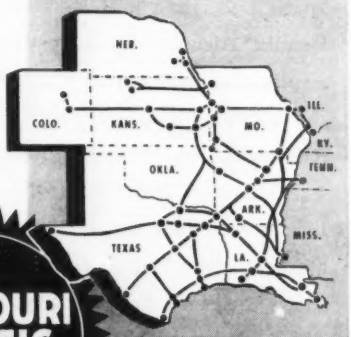
P OWER and PLANT SITES

A GRICULTURAL PRODUCTS

C OORDINATED TRAIN-TRUCK SERVICE via MO-PAC



The WEST-SOUTHWEST offers industry a treasure chest of natural resources ...a large labor supply...and one of the nation's fastest growing market areas that is amply provided with dependable transportation. Thinking of expanding? Let us give you *all* the facts about industrial opportunity in the MO-PAC Empire!



WRITE or WIRE: *Industrial Development Depts., Missouri Pacific Lines, 1706 Missouri Pacific Bldg., St. Louis 3, Mo., or Union Station, Houston 1, Texas. Inquiries are kept in strict confidence.*

MISSOURI PACIFIC LINES

SERVING THE WEST-SOUTHWEST EMPIRE

Actual storm ahead as pilot sees it on radar scope. It indicates that, by changing course very slightly, he will find a smooth, safe route.

Bendix AIRBORNE RADAR..

Bendix* Airborne Radar, a device carried right in the airplane to spot storms miles ahead, has been used by the military for several years. Now Bendix is supplying it to airline and company-owned aircraft.

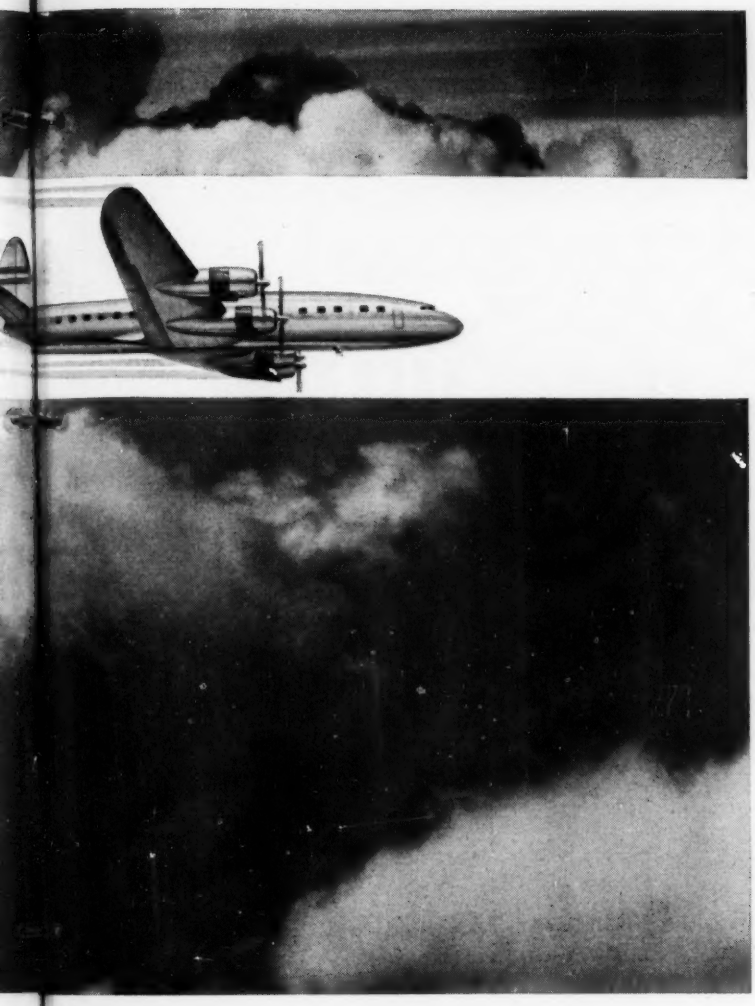
This new device does what human eyes cannot do. It not only sees up to 150 miles ahead, even in the blackest night, but also looks right through storms and shows their size and intensity.

In the small photo above, for example, you can see white areas which are a line of storms. Those with black centers represent great turbulence. With only a slight change in course the pilot avoided these storms.

Airlines are buying Bendix Airborne Radar because it makes possible a more comfortable, swifter ride on a more direct course. Without airborne radar it has often been necessary to fly many extra miles to avoid storms whose areas and intensities were not definitely known.

Pilots hail it as one of aviation's most important developments, not only because of its storm-warning accuracy, but because it also acts as a navigational aid. Even in heavy overcasts it can see rivers, mountains and the outline of the terrain below. Write Bendix Radio Division in Baltimore for further information.

This is one of the hundreds of products Bendix has



THE NAME Bendix AVIATION CORPORATION MILLIONS TRUST

PRINCIPAL DIVISIONS AND BASIC PRODUCTS

BENDIX RADIO, TOWSON, MD.
radar; auto, railroad, mobile and aviation radio; television.

ECLIPSE MACHINE, ELMIRA, N. Y.
bicycle coaster brakes, Stromberg carburetors, electric fuel pumps, starter drives.

SCINTILLA, SIDNEY, N. Y.
aviation ignition systems; industrial engine magnetos; diesel fuel injections; electrical connectors; ignition analyzers.

ZENITH CARBURETOR, DETROIT, MICH.
automotive, marine and small engine carburetors.

BENDIX-SKINNER, DETROIT, MICH.
micronic filters.

PACIFIC, NORTH HOLLYWOOD, CALIF.
telemetering equipment; hydraulic and electric actuators; depth recorders; boat steerers.

BENDIX FRIEZ, TOWSON, MD.
meteorological instruments, precision instruments and recorders.

BENDIX PRODUCTS, SOUTH BEND, IND.
automotive brakes, carburetors, power steering; aviation brakes, landing gear, fuel metering.

ECLIPSE-PIONEER, TETERBORO, N. J.
aviation instruments and components; foundry.

MARSHALL-ECLIPSE, TROY, N. Y.
brake blocks, brake lining, synthetic resins.

RED BANK, EATONTOWN, N. J.
electronic tubes; dynamotors, inverters.

CINCINNATI, CINCINNATI, OHIO
automatic viscosity regulators, nuclear products.

BENDIX COMPUTER, LOS ANGELES, CALIF.
digital computers.

HAMILTON, HAMILTON, OHIO
jet engine controls and aircraft pumps.

LAKESHORE, ST. JOSEPH, MICH.
power steering and automotive devices.

UTICA, UTICA, N. Y.
aviation components.

MONTROSE, SOUTH MONTROSE, PA.
aviation components.

PIONEER-CENTRAL, DAVENPORT, IOWA
aviation instruments and components.

YORK, YORK, PA.
electronic devices; test equipment.

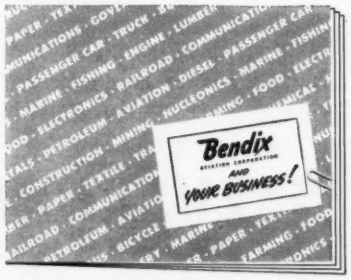
BENDIX-ECLIPSE OF CANADA, LTD.
Windsor, Ont.

BENDIX INTERNATIONAL
New York City

*REG. TRADE-MARK

finds a smooth corridor through stormy skies!

developed and manufactured for the aviation industry. We also make hundreds of other automotive, electronic, nuclear and chemical components and devices for those and scores of other industries. A request on your company letterhead will bring you "Bendix and Your Business" —the complete Bendix story on how we can contribute to your business. For engineers interested in a career with us, we have another booklet "Bendix and Your Future."



BENDIX AVIATION CORPORATION
Fisher Building • Detroit 2, Michigan

Wanted: 341,000 More Classrooms

Schools that were thought to be adequate a few short years ago are bursting at the seams as our youngsters, now about 35 million strong, flock back to their arithmetic and geography. As the new school year gets underway, our nation's schools need additional facilities for about 9,200,000 pupils, according to the U. S. Office of Education. Figuring an ideal average of 27 children to the classroom, we face a tragic shortage of 341,000 classrooms alone.

We're simply not gaining in the race to build enough schools. Population is outstripping the gain in new construction and the expansion of existing buildings. In just six years there will be over 40 million children in schools.

The overcrowding problem which plagues local school boards is being dealt with in various ways. In rural areas a happy solution is often found when several neighboring areas join forces to build a consolidated school, far better and more spacious than each locality could provide on its own. An outstanding example, shown above, is the Palisades High School in Bucks County, Pa., about 40 miles north of Philadelphia.

Of streamlined, one-story design, it is built around an interior court so that sunlight can flood all classrooms. More than 600 children, from seventh through twelfth grade, arrive in a fleet of fifteen buses, converging from five surrounding townships. Here they enjoy advantages never dreamed of when they were crowded into one-room country schoolhouses: well-lighted, functional classrooms; modern cafeteria, fully equipped auditorium and gymnasium; laboratories and shops.

Here, as in so many of today's new schools, the architects used Bethlehem open-web steel joists to speed construction and keep costs down. Strong and fire-resistant, these lightweight steel members span the large areas of auditoriums and gymnasiums, eliminating interior supporting columns. And they help architects to stretch tax dollars farther in planning the attractive schools so badly needed today, and in the years ahead.

BETHLEHEM STEEL

BETHLEHEM STEEL

Trend of American Business

24th and N Streets, N.W.
Washington, D. C.

Stable business activity is to be expected for months immediately ahead.

Autumn months probably will show some pickup but no more than normal.

A sharp recovery from last spring's low point does not now appear likely.

These are the conclusions of most appraisers in business and Government. National Industrial Conference Board, for example, finds after a survey of 153 manufacturing firms that no upsurge is expected, but no downturn either. That private consensus is echoed in official circles.

Actually, there is little in sight that will spark another boom.

Government spending? That's in a downtrend, scheduled to go lower as far as the Federal Government is concerned.

Business spending? It's dipping, too. Business firms intend to spend a little less on plant and equipment, and they are still trimming inventories.

Consumer spending? That's running higher now than at the top of the 1953 boom. It seems unlikely that the total will rise very much more.

Foreign trade? It may edge higher, but no sharp rise is in sight.

These are the four measures of the nation's total output--the outlays that make up the total dollar value of goods and services produced. The trends now suggest no more than a moderate growth from current levels.

There is ample evidence, however, of business stability.

Industrial output, in the aggregate, has been on an even keel since last April, after adjustment for usual seasonal variations.

Wholesale-price level has held within a narrow range for two years.

Cost of living has not varied much in a year.

People's incomes, after taxes, are running a bit higher than last spring.

Civilian employment has been edging upward all year. Unemployment is growing no worse, despite an increase in the labor force.

These are all signs of strength. Businessmen find satisfaction in the fact that the country has adjusted from boom peaks without a major upset.

Business confidence is further reflected in this year's dividend record. Dividend payments by corporations are running 5 per cent above a year ago. That is the report of the Commerce Department, based on public corporate reports.

Manufacturing corporations in the first seven months of this year paid more than 2.4 billion dollars in dividends, 3.5 per cent over last year.

Increased dividends are being paid chiefly by manufacturers in the iron and steel, chemical, paper, and oil-refining industries.

Smaller dividends are reported for automobiles, textiles and leather, and the nonferrous metals industries.

Nonmanufacturing companies are turning in a better performance than the

(over)

manufacturers. Their publicly reported dividends are running 7 per cent ahead of last year and totaled nearly 2.4 billions for the first seven months.

All nonmanufacturing groups reported increases in dividends. Included are utilities, trade, finance corporations, mining firms and railroads.

The dividend record shows that American business, on the whole, has not been hit very hard by the dip in activity. Profits stay fairly high.

Home repairs and improvements are becoming rather big business.

Homeowners spent 3 billion dollars to fix up their properties during the first five months of this year. That's a Commerce Department estimate.

Additions to existing homes accounted for 331 millions.

Improvements and alterations took 1.4 billions.

Repairs and replacements cost close to 1.3 billions.

These are investments made in owner-occupied homes alone. They do not include rental properties or large co-operative apartments. Included in the estimates are outlays for tools and materials, the expense of small contracts.

This reflects in part the "do it yourself" trend that has grown up since World War II. It is based on a Census Bureau survey--first ever made. These outlays are in addition to money spent for new construction. Prospect is that home improvements will provide business with a steady market.

Titanium production is getting a boost from Government. This is a tough, heat-resisting metal, important to jet-engine and weapons production.

General Services Administration, the Government's housekeeper, has signed a contract calling for a 31.5-million-dollar plant. Builder is to be Union Carbide & Carbon Corporation, operating through a subsidiary.

Funds for building are to be supplied by the company.

Titanium output, however, is to be bought by the Government, which has an option to buy 4,500 tons a year, and promises to take up to 6,000 tons if the private concern cannot find other buyers.

Location is to be near Ashtabula, Ohio. A new process is to be used.

Meanwhile, the Defense Department is putting new emphasis on research and development in titanium. The metal now is relatively scarce, but high hopes are held for widespread use in the future. Alloys of titanium have been made that are stronger than many steels and 40 per cent lighter.

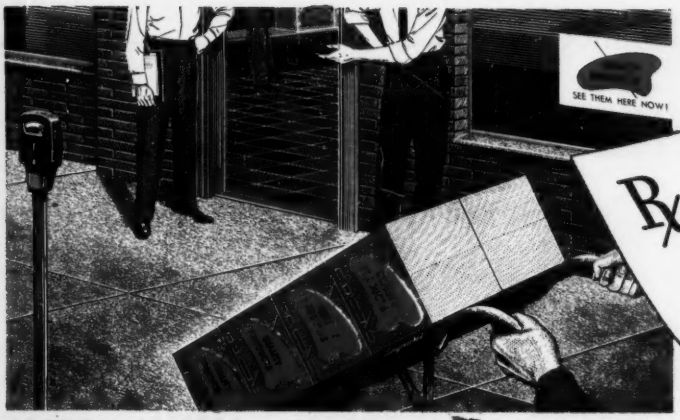
Farm production is to be less rigidly controlled in 1955 than had been planned originally by the Department of Agriculture.

Acreage controls are to apply on wheat, cotton, corn, tobacco, peanuts and rice. These crops also are scheduled for price supports.

Other plantings on acreage taken out of production for basic crops are not to be controlled. Farmers may plant what they wish on these acres, without penalty, except for potatoes and commercial vegetables.

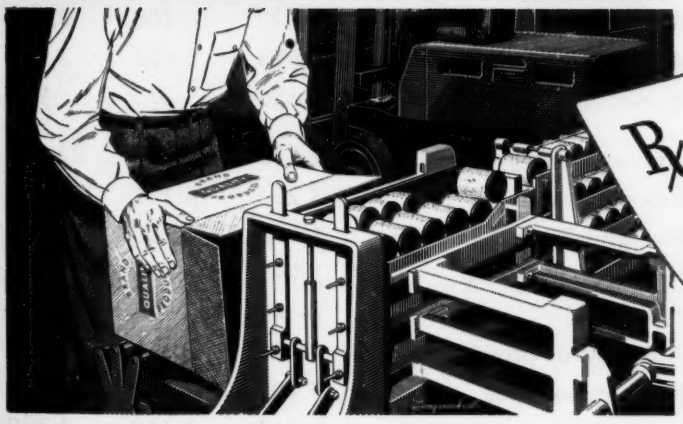
Original plan called for controls on the diverted acres, too, to prevent the building up of other surpluses. That has now been discarded.

Treasury operations in the year to end June 30, 1955, are to have slight effect toward either inflation or deflation. Cash deficit now is estimated at 2.1 billions--a moderate sum so far as the whole economy is concerned.



Rx Gaylord Boxes for printed salesmanship

Rx Gaylord Boxes for product protection



Rx Gaylord Boxes for packing efficiency

Gaylord Prescribes the Right Container for Your Product

Gaylord Boxes

When it comes to shipping, every product is unique unto itself. Every product needs containers that are prescribed to match its individual characteristics. See Gaylord for the right container prescription — for boxes that protect products, sell brands, promote packing efficiency.

GAYLORD CONTAINER CORPORATION • General Offices • ST. LOUIS, MO.

SALES OFFICES COAST-TO-COAST

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

IKE'S BUDGET STILL OFF BALANCE

Federal Spending Lower, but So Is Income

You can get a better focus now on the way the Administration is faring with its budget.

An official review, just out, shows how U. S. finances are affected by farm output, interest rates, congressional moves and new looks at defense.

Budget balance looks harder to achieve than it once did.

Still, there's cheering news for many in the big new budget.

The new federal budget for this year, ending next June 30, shows this:

- Spending is to be down even more sharply than was planned last January.
- While military outlays—based on deliveries of goods—are to be off, placing of new military orders is to be stepped up appreciably.
- With revenues dwindling, the deficit is to be much bigger than planned.

These are the points that stand out in the Administration's annual late-summer review of the budget.

Changing picture of U. S. finances shows up clearly in budget totals. In January, when officials briefed Congress on the budget outlook and asked for new appropriations, this was the plan for the year ending next June 30:

Outgo scheduled was a little less than 65.6 billion dollars.

Income was estimated at 62.6 billions.

Deficit—in the "regular" budget—was put at 2.9 billions.

Now that officials have had a chance to study their appropriations, and take a new look at revenue and spending trends, this is the picture:

Outgo is put at 64 billions.

Income is seen as 59.3 billions.

Deficit is anticipated at 4.7 billions—up about 60 per cent since official estimates in January.

Bigger deficit, as you can see from these figures, is due entirely to the drop in Government income.

Where officials in January planned to cut 2 billions from the spending level of the year ended last June 30, they now plan to lop off an additional 1.6 billions.

Where budgeters figured income

(Continued on page 142)

RED INK: MORE OF IT

(millions of dollars)

	1954* Actual	1955* As Ike Saw It Last January	1955* As Ike Sees It Now
GOVERNMENT OUTGO	**$67,579**	**$65,570**	**$63,968**
National security, total	**46,209**	**44,860**	**41,900**
Military personnel	10,961	10,335	10,388
Operations	9,256	8,769	8,141
Major procurement	15,683	14,546	13,287
Public works	1,706	1,725	1,346
Research, development	1,385	1,350	1,306
Other military	1,155	925	1,032
Military aid abroad	3,520	4,200	3,300
Atomic weapons	1,893	2,425	2,200
Stockpiling	650	585	900
Other spending, total	**21,370**	**20,710**	**22,068**
Veterans' benefits	4,256	4,192	4,422
Foreign affairs	1,688	1,250	1,144
Health and welfare	1,993	1,807	1,935
Housing	—449	—277	367
Agricultural programs	2,568	2,366	2,841
Natural resources	1,200	1,103	1,086
Transport, communication	1,764	1,418	1,780
Commerce, finance	129	162	—42
Interest	6,459	6,875	6,635
General research	259	223	337
Labor	273	281	329
General government	1,230	1,160	1,159
Contingency reserve	0	150	75
INCOME	**64,550**	**62,642**	**59,313**
DEFICIT	**3,029**	**2,928**	**4,655**

**Fiscal year ending June 30.*

Everybody's better off where there's a CREDIT UNION

Read how both management and employees of these well-known American companies benefit from the many services of credit unions.

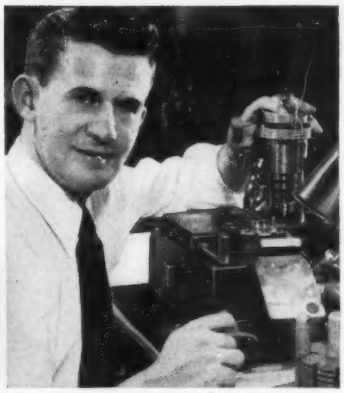
VISIT any company where employees operate a credit union, and ask anyone there from the office boy to the president how he feels about the credit union. You'll get enthusiastic response from everyone, because the benefits of a credit union are many for both employees and management.

A credit union is a tried and proved method by which any group of people such as employees in an office or plant can build greater financial security. Credit union members save money together and use their combined savings as a source from which members can borrow. Savings pay good dividends, and loans are made at low cost because each credit union is operated by its own members at little or no expense. All credit unions are chartered by State or Federal Government and subject to annual examination.

As a result of credit union help in solving money worries, people are happier and better adjusted at their work. Many companies whose employees have credit unions report that problems like pay advances and wage garnishments are eliminated. The credit union plan of self-help is endorsed by labor, management, church and government. You can help bring its many benefits to the place where you work.

ELGIN NATIONAL WATCH COMPANY

James G. Shennan, President: "The security which our people have built for themselves through their credit union has made them happier, more efficient employees. It relieves our management of many problems with employees' personal money troubles."



Kelly Watts, Factory Employee: "It sure means a lot to know I can get a low-cost loan right here whenever I need it." Most credit unions also pay for life insurance on loans to members. It protects borrowers' families as well as the credit union itself.

KRAFT FOODS COMPANY

G. C. Pound, President: "Both the company and our employees have benefited greatly from employees' credit unions. I believe our 12 credit unions have done much to develop the important habit of thrift and a fine spirit of self-help among our employees."

Members deposit savings in Kraft's Chicago plant credit union. Convenient location of the credit union and good dividends encourage regular saving habits. As an added service, many credit unions pay for life insurance to cover members' savings.

In America today, more than 18,000 credit unions are serving over 9,000,000 people, including employees of many of the country's best-known companies. Clip and mail the coupon below for complete information on how a credit union can be set up to help the employees and the company where you work.

CREDIT UNION NATIONAL ASSOCIATION
Dept. US-5, Madison, Wisconsin

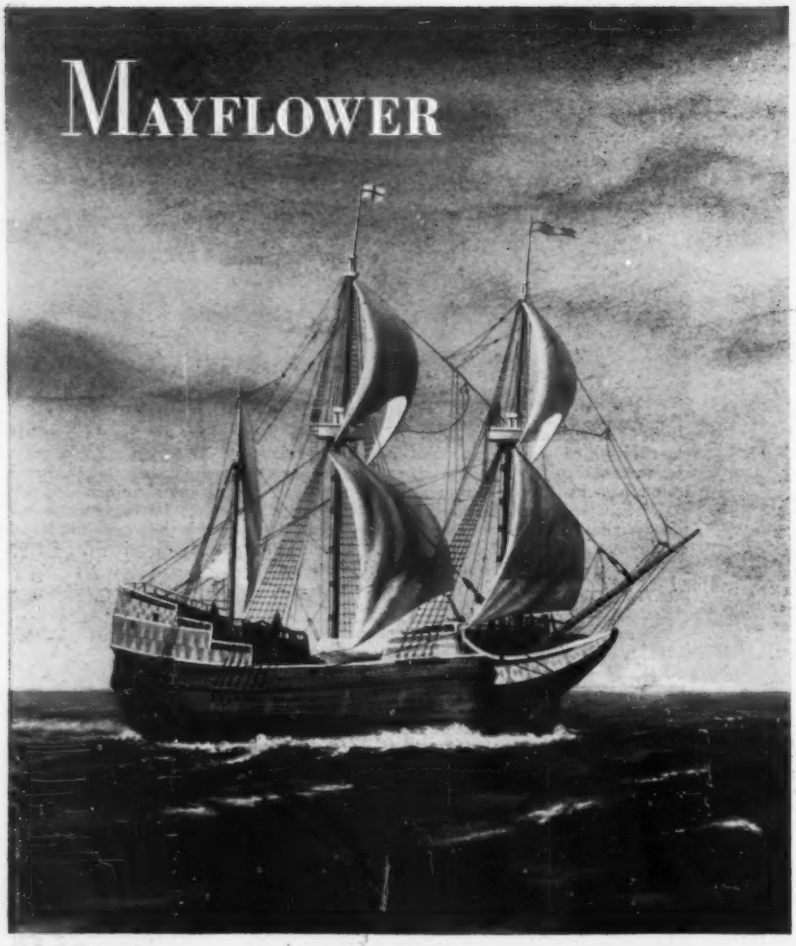
Please send, without cost, complete information on how to organize a credit union.

NAME_____

ADDRESS_____

_____

COMPANY NAME_____



Today . . . As Then . . . the Best Way to Move Long-Distance

The Mayflower of today is *your* Mayflower. It's the great, nation-wide system that makes long-distance moving of household goods *safe* and *easy*. It's at your service, and at your company's service to take the work and worry out of moving. That's what you want . . . that's what your employees want. Mayflower assures it for both of you. Today, Mayflower handles more moves over longer distances than any other mover. Why not check your organization now to see that Mayflower is consulted whenever there's long-distance moving to be done?

AERO MAYFLOWER TRANSIT CO., INC. • INDIANAPOLIS

Mayflower's organization of selected warehouse agents provides on-the-spot representation at the most points in the United States and Canada. Your local Mayflower agent is listed in the classified section of your telephone directory.

AERO Mayflower
America's Finest

NATION-WIDE FURNITURE MOVERS

Orders for military goods to be increased again . . .

would be off 1.9 billions, they now foresee that it will be down a whopping 3.3 billions more than that. Receipts are to be pared an extra billion or so by excise cuts in excess of Administration recommendations. The new tax code also went beyond White House plans. In addition, the business slump is to reduce revenues by an added 2 billions or so that the Administration did not take into account last January.

Result: The budget that was to move steadily toward a balance now is moving rapidly toward a much bigger deficit.

A shift in the trend of contract letting, though, is the really significant news in the budget presented by Secretary of the Treasury George M. Humphrey and Budget Director Rowland R. Hughes.

Orders for military goods now are to be signed at a far swifter pace.

Those orders, in the last year, underwent a drastic decline as the Administration adopted a new look and a changed direction. Many outstanding orders, moreover, were canceled—particularly for tanks and trucks.

In early days of the Korean-war build-up, military orders were being placed at rates that in some months approached a level of 50 billion dollars a year.

Last year, though, orders plummeted to 9.2 billions. This was the net total of new military contracts signed in the year ended June 30—after allowing for cancellations.

The decline accounts for much of the role that federal finances have had in the business slump. New orders, it's agreed, are the action that puts industry to work—hiring forces, assembling capital, getting started. Most federal payment doesn't occur until goods and services are delivered. Orders are what stimulate business, particularly in the area of military "hardware" items that take months or years to produce.

That, briefly, is the significance of the swift rise now planned in new military orders.

Specifically, new military contracts in the year ahead are to be signed in the amount of 16 to 18 or 19 billion dollars—something like double the total in the year ended last June. And this is officially described as about the rate that the Administration now plans to maintain annually for the long haul, the indefinite period of military preparedness.

Actual spending, meanwhile, is to be down for some Government programs and up for others. You get, in the table on page 140, the detailed picture of what the Administration plans to spend this year, compared with spending plans an-

. . . Stockpiling of metals will take still more money

nounced last January and the actual spending for the year just ended.

Military spending for the year to end next June 30 is now put at 35.5 billion dollars—off 2.2 billion from the January estimates and 4.6 billion from last year's actual spending.

But note this: That new spending rate for this year is about the same as the expenditure rate that prevailed in July and August. What's indicated is a flattening out of military outlays at present levels.

For individual services, new cuts since January come to 1 billion for the Army, 200 millions for the Navy and 800 millions for the Air Force. Cut for the Department of Defense itself is 75 millions.

Big items of military procurement and production—aircraft, ships, trucks, weapons, ammunition and the like—account for most of the new reductions. On these, outlays are planned at 13.3 billions, off 1.2 billions from January's plan and 2.4 billions from last year's actual spending.

As examples, spending on planes is down about 400 millions from January estimates and spending on ammunition is down the same amount.

The table shows how other military spending classes are being reduced.

Other security programs also are being revised—downward.

Military aid to U. S. allies had been planned in amounts well above those for the year just ended. Instead, there is to be a reduction under that year. And, the official word is that aid to European allies will be de-emphasized in plans for months ahead, while new emphasis is to be placed on aid to Asia and elsewhere.

Atomic programs will take more money than was spent last year, but not as much more as was thought in January. And the extra funds are due to higher cost of operating additional facilities, not to any plans for big new construction.

Stockpiling is one defense program that's to be expanded—by more than 50 per cent over January plans and considerably above the level of last year. Bigger outlays are due mainly to procurement of more metals, particularly lead and zinc.

Nondefense spending, meanwhile, is to be up in the year ahead—about 1.4 billions over the January estimate and nearly 700 millions over last year's total. The White House, though, disclaims responsibility for most of the rise. Increases, and some decreases—the budget report makes clear—are mostly in items that, so far as the Administration is concerned, are "relatively uncontrollable."

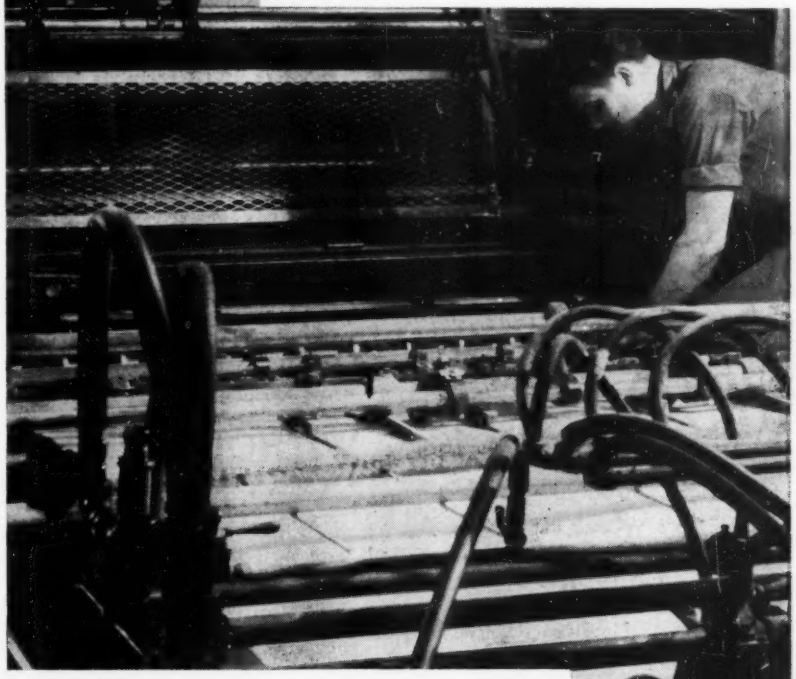
(Continued on page 144)

WHERE PROFITS ARE IN PRINT

St. Louis

A Great Place to Do Business

St. Louis is the fifth largest commercial printing center in the nation, with an over-all output of more than 45 million dollars annually. As a center for offset-lithography, St. Louis ranks third nationally. Backing up its press facilities, St. Louis offers unexcelled production services and equipment. In the number of people employed, St. Louis printing rates high among the industries in this center of diversified industry . . . St. Louis, nearest major city to the U. S. center of population, is at the *center of activity* in business.



. . . with a Great Bank to Help You!

Your association with First National Bank in St. Louis not only speeds your business transactions . . . it identifies you, as well. And with the information provided by First National—whose directors hold key positions in St. Louis business—you'll find it's easier to plan ahead. First National is at the *center of activity* in St. Louis!

Inquiries are cordially invited. Address the Industrial Service Department.

1ST

THE FIRST NATIONAL BANK IN ST. LOUIS

FIRST NATIONAL BANK in ST. LOUIS

Member Federal Deposit Insurance Corporation

business with

NORWAY

Factors affecting Norway's balance of trade are discussed in Chemical Bank's current review of this vigorous and energetic nation.

If you do business with Norway, you will be interested in this latest International Economic Survey.

For your copy, write to us on your company letterhead.

CHEMICAL BANK
& TRUST COMPANY
Founded 1824

International Division
165 BROADWAY, NEW YORK 15

Member Federal Deposit Insurance Corporation

Send A Copy To Your Friends ...WITHOUT CHARGE

U. S. NEWS & WORLD REPORT
24th & N Streets, N. W.
Washington 7, D. C.

Please send a free copy of "U. S. NEWS & WORLD REPORT" with my compliments to the persons listed below:

☐ If possible send the September 24, 1954 issue.

To..... To.....

Address..... Address.....

City.....Z.....State..... City.....Z.....State.....

• • •

To..... To.....

Address..... Address.....

City.....Z.....State..... City.....Z.....State.....

Sender.....

Address.....

.....

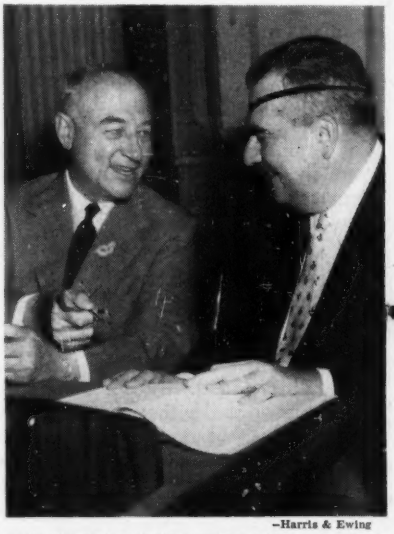
Farm programs expected to cost half billion more . . .

In total, nondefense spending is to go from 21.4 billions last year to about 22.1 billions this year.

Farm price supports and other agricultural programs are to take more than 2.8 billion dollars—over and above what the Agriculture Department takes in on repayment of loans and the sale of surplus commodities. That figure is up nearly half a billion dollars since January.

Main reason, say budget officials, is the added funds needed for price supports "because of near-record production in the current crop year and the system of high, rigid price supports in effect this year"—a system just abandoned.

Housing programs—and community development—also will cost more than



—Harris & Ewing

BUDGETERS HUMPHREY AND HUGHES
The snag: "Uncontrollable" items

the White House planned earlier in 1954, as the table shows. One reason is the large volume of home mortgages sold by Government last year with a promise to buy an equivalent amount in the future. Another is a smaller-than-expected flow of receipts from low-rent public housing. Favorable market conditions, it seems, have permitted Government to sell much of its stake in local programs.

Transport and communications—that's postal, highway grants and the like—also will cost more than had been planned. One reason is the failure of Congress to grant postal-rate increases urged by the President.

Public power, reclamation, irrigation, and similar programs, together, fall in a different group. They're going to require

. . . National debt is to push toward its higher ceiling

less money than in the past, and even less than planned in January.

Reductions in these major-project costs, says the Administration, are due to "improvement in management and administration"—under which "uneconomic projects are not being started"—also to completion of past projects and to savings on continuing projects.

For other programs, spending is to be higher in some areas, lower in some.

Interest on the national debt will require less than it has in the last year—the Administration's easy-money policy will see to that. And general programs in the field of commerce, industry and finance will cost less, on balance, as a result of increasing cash receipts from these same programs.

Government, on the other hand, will spend more than it did last year—though not much more—on veterans' benefits, education and research, health and welfare, and labor programs.

National debt, as a result of these operations, is to rise rather steeply. At 274.4 billions recently, the part of the debt that is subject to a legal ceiling is due to shoot past the old maximum of 275 billions before many months.

And, before next spring, the debt is to crowd fairly closely against the new temporary ceiling of 281 billions. By June 30, 1955, the figure is expected to be down, again, below the 275-billion-dollar level that once more is to become the legal maximum.

These facts concern the "regular" or "bookkeeping" budget. It isn't the only one that needs to be watched.

Cash budget is one that's noted for its effect on the economy.

Reason is that the cash budget includes all cash payments to the public and all cash receipts from the public. It, thus, shows more clearly the influence for inflation, or deflation than the regular budget, which omits many dollars paid to Social Security trust funds and similar Government accounts.

What the cash budget shows is no great influence for inflation in months ahead, but more than the Administration was planning last January.

Specifically, the cash budget was to be almost precisely in balance—there was to be a tiny cash surplus.

Now, with a clearer picture available, officials look for a cash deficit of 2.1 billion dollars. Government, in other words, will pour about 2.1 billions more into the economy than it takes out in the same period. Result can be a moderate over-all lift for business in the months ahead.

EXCLUSIVELY YOURS

when you advertise in The Seattle Times

A CERTIFIED SURVEY BY DAN E. CLARK II & ASSOCIATES
FIRST STUDY of the NEW ENLARGED ABC CITY ZONE

117,000

(OUT OF 226,200)

homes in Seattle's new enlarged ABC City Zone

Facts presented here are from a recently completed, independent, authoritative study of newspaper circulations in Seattle's new enlarged ABC City Zone... by the nationally recognized newspaper research organization, Dan E. Clark II & Associates. (Ask us, or see your O'Mara & Ormsbee man for full published report.)

83.2% of Seattle's top income families —$7,000 a year and more.

Yes—The Times *Really* Sells Seattle!

Represented by O'Mara & Ormsbee, Inc.
New York • Detroit • Chicago • Los Angeles • San Francisco

The Seattle Times

SEATTLE'S ACCEPTED NEWSPAPER

BARGAIN FARES everywhere

Now everyone can afford to fly TWA. Just compare the fare by TWA Sky Tourist with the total cost by rail or bus – including meals, pillows, tips and the many other incidentals you pay for during surface trips. You'll discover TWA speed and convenience cost no more. And service is beyond compare. You fly on world-proved Constellations piloted by million-mile crews, enjoy prompt service by ever-attentive hostesses. Best of all, you can go now and take a year or more to pay with TWA's "Time Pay Plan"!

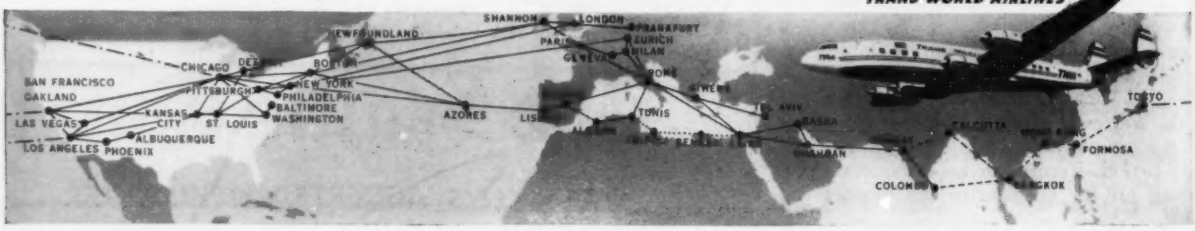
FLY TWA SKY TOURIST AND SAVE!

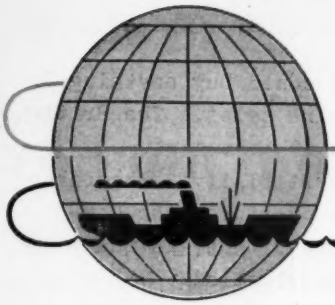
Destination	Fare	Down Payment
New York to London and return	$425.00	$43.00
New York to Paris and return	$461.00	$47.00
New York to Rome and return	$551.40	$55.40
New York to Frankfurt and return	$493.60	$49.60
Coast to Coast	$ 99.00 (plus tax)	$10.90

Fares to Europe effective during Thrift Season, Nov. 1 through Mar. 31.

Where in the world do you want to go? For reservations and information, call TWA or see your TWA travel agent. If more convenient, write TWA, "Skyliner Holidays," 380 Madison Ave., N. Y. 17, N. Y.

Fly the finest... **FLY TWA**
TRANS WORLD AIRLINES





Business Around the World

WASHINGTON • LONDON • LEIPZIG

›› Lots of talk but few startling decisions--that's the pattern to expect, as the financial wizards gather in Washington for the annual meeting of the International Monetary Fund. There will be no sudden announcements by the British, Germans or anyone else that their currencies are now convertible into dollars.

Talk at the IMF meeting will center on currency convertibility, the progress made in that direction, and, especially, the problems still ahead.

Uncertainties about U.S. tariff and trade policies will get a working over. Until the British, Germans, Dutch and Belgians get a clearer idea of what they can earn in the U.S. market, how can they make their currencies convertible? There will be a lot of that kind of talk--for public consumption. But there can be no real decisions on U.S. trade policy until the new Congress.

Another problem, to get plenty of probing at the IMF meeting, is the financial backing or cushion that can be put behind convertibility attempts. "Runs" may develop as currencies are made convertible for the first time in many years. Enough hard cash has to be in the kitty to take care of this possibility. Gold and dollar reserves of each country might not be sufficient.

The IMF has relaxed its rules and stands ready to put substantial funds behind convertibility attempts. However, the British, particularly, would like to see the U.S. pledge additional funds for this use. This is a touchy matter to be explored behind the scenes with U.S. financial officials and bankers.

The European Payments Union, the present clearing system for Western European trade debts, will have to be changed if some European currencies are convertible and others are not. That's another problem to be aired in Washington.

It's perfectly clear from this incomplete list that the hurdles still standing in the way of currency convertibility are considerable.

Also, U.S. business conditions remain an imponderable for European countries thinking about convertibility. None of these governments is likely to take the plunge until U.S. business shows a marked uptrend.

›› Originally, the big push toward convertibility came from the British. But recently they seem to be having second thoughts about it. There are a number of local reasons for this.

British exports to the U.S. lately have shown a serious decline. In August, they were the lowest since December, 1951. A delayed reaction from the U.S. recession may be setting in. Well-sustained dollar earnings are regarded as a prerequisite to making the pound convertible.

British industrialists and exporters have wakened up to the fact that they will meet much sharper competition if the pound is made convertible. Discriminatory import controls then would be taken off and there no longer would be

(over)

markets protected by exchange and trade controls. Anyone could buy anything from anybody. Price, delivery, credit terms would determine sales. The British businessman is a little nervous about all-out competition of this sort.

The British Labor Party does not favor currency convertibility. The Labor Party now seems to be gaining strength and may be able to overthrow the Conservative Government in the next year or so. Convertibility, thus, is under a political cloud. Some say it shouldn't be tried before an election.

If the pound does not become convertible, it's doubtful if the Germans, Dutch or Belgians will risk convertibility on their own.

>> The Leipzig Fair, ended last week, can be counted a great success--from the Communist viewpoint. Major aims of its Communist managers were: (1) to promote interest of Western countries in trading with Iron Curtain countries, and (2) to show off the industrial skills and products of the Communist world.

Theme of the Leipzig Fair appeared on banners on many buildings: "Trade is a link in international understanding." In other words, more East-West trade makes sense. You have things we Communists want and we have things you want. So let's bury our differences in one big, happy trading family.

Fair's management plugged this idea in business circles of Western Europe and succeeded in stirring up considerable interest.

Western European exhibitors were much more numerous than last year and took up much more space. For example, the British reserved six times as much space as last year; the Dutch, five times as much; the French, three times as much; the West Germans, nearly three times as much.

American firms were urged to participate by the fair's managers. But there were actually no U.S. industrial exhibits.

Swiss exhibitors reported that Russian buying interest was concentrated on heavy machinery, complex machine tools and the like. Russians showed little curiosity about soft goods, simple types of machines, luxury goods.

>> All the Communist countries were represented at Leipzig, which is the biggest fair of its kind behind the Iron Curtain.

Leipzig Fair is a show window of the Communist world. For the Communists, it is more an exhibition than a market place. It's really propaganda.

Exhibits of the less-well-developed Communist countries showed this. They stressed not so much traditional crafts and products as surprising new ones.

The Chinese exhibit, for instance, had not only silks, ceramics and spices but also a generator, an air compressor, a well pump, radio sets.

Bulgarian booths had familiar fruits, wines and rugs but also mining machinery, electrical apparatus and machine tools.

The Soviet, East German and Czech pavilions were crammed with things such as drill presses, lathes, precision tools, optical instruments, automobiles.

Wary Westerners, veterans of such fairs, were not sure, however, that these industrial products could be bought in quantity or in the same quality as the samples at the fair. Communist representatives claimed that anything at the fair could be delivered, and they stated what quantities were available.

Contracts signed at the fair totaled 400 million dollars, the East German Government announced. That sounds high. But, whatever the figure, Western buyers now will get a new chance to see whether the Communists can really deliver on their promises. Their record in recent years hasn't been good.

Tonight the world

What will you see in your living room tonight? Musical comedy? Drama? History in-the-making?

The choice is yours in this age of wonders.

An electronic miracle? Of course. And J&L Perma-Tube, our coated tubular steel antenna mast, helps make this miracle dependable. Perma-Tube is strong, corrosion-resistant, and inexpensive.

Perma-Tube is another example of J&L steels that find increasing use in the products made by American industry.

J&L STEEL

Jones & Laughlin

STEEL CORPORATION – *Pittsburgh*

Look to J&L...for the steels that work for modern industry

McCarthy "Censure" Case:

THE EVIDENCE IS IN— VERDICT YET TO COME

Pros and cons in the McCarthy "censure" case are on the record now.

Charges against Senator McCarthy involving his conduct as a Senator were aired before a special Senate committee. Senator McCarthy's defense was heard. Witnesses testified, many laws were cited.

Now the evidence is in the hands of the special committee, headed by Senator Arthur V. Watkins (Rep.), of Utah. But the final chapter in this case will be written by the Senate itself.

Given below are excerpts from the last days' testimony, from the official record.

As the hearing resumed, the associate counsel of the Select Committee, Guy de Furia, cross-examined Senator Joseph R. McCarthy (Rep.), of Wisconsin, on the general charge that he had refused to testify before the Senate subcommittee that investigated the Senator's activities in 1951 and 1952. From the transcript:

Mr. de Furia: Did you have any intention of appearing before this subcommittee?

Senator McCarthy: If I were ordered to appear, I would have appeared. I made that very clear to the chairman of the committee—not only if I were subpoenaed. I made it clear to him that I would not appear merely if they accorded me the right to appear; that I had no desire to appear before that committee. I made it clear to him that I thought they were not conducting an honest investigation, and that I would not request any right to appear, but that I would honor a subpoena or an order.

Mr. de Furia: I should like to know if there is any distinction between an order and a subpoena, as you use the word "order." Did you mean you would not appear unless you were subpoenaed?

Senator McCarthy: No. An order would be a subpoena.

Mr. de Furia: Now, nowhere in this long correspondence—

Senator Watkins: Just a minute. As a matter of fact, I would like to call to the Senator's attention, and get his point of view on it, his remembrance—you remember he testified to a conversation he had with Senator Gillette on the floor of the Senate—

Senator McCarthy: That is right.

Senator Watkins: —in which, as I recall, you told him that you would not appear unless you were subpoenaed?

Senator McCarthy: Either subpoenaed or ordered, whichever word I used. I used them interchangeably.

Senator Watkins: Did you also tell him at that same time that you would not appear, unless you were given permission to cross-examine?

Senator McCarthy: No.

Senator Watkins: Are you sure about that, Senator?

Senator McCarthy: I am sure about that. I told him I would not accept one, when they said, "You may appear, if you wish"—that I did not wish to appear unless I had the right to cross-examine. In other words, I would not appear unless I had the right to cross-examine, unless they ordered me to appear; in which case I recognized their right to do that. I told him I would do that during the session, even though they had no right to subpoena me. I told him I would not question an order or the subpoena. I told that to the press, also.

* * *

Mr. de Furia then turned to the charge that Senator McCarthy had abused fellow Senators. From the transcript:

Mr. de Furia: Senator, have you referred to the Senator from Vermont [Senator Ralph E. Flanders (Rep.)] as senile on more than one occasion?

Senator McCarthy: I don't recall on how many occasions.

Mr. de Furia: Was it more than once, Senator?

Senator McCarthy: It might well be.

Mr. de Furia: To the press and to the public?

Senator McCarthy: I am inclined to think so.

Mr. de Furia: Is there any doubt about it, Senator?

Senator McCarthy: There is no doubt that I thought he was senile and referred to him as senile.

* * *

Mr. de Furia: Do you think you were justified in referring to a member of the United States Senate, one of your colleagues, in terms such as that?

Senator McCarthy: Because you are a member of the United States Senate, you are not free from criticism. There is nothing, there is no halo, that surrounds the throne. I may say that his language concerning me was much stronger than that, but if you think a man is senile, he is engaging in improper activities, you have a perfect right to say that you think he is senile. That is part of our freedom of speech.

* * *

Mr. de Furia: . . . Do you think it is proper for you, sir, to refer to your colleagues in the United States Senate in those terms?

Senator McCarthy: Not if you do it on the floor of the Senate. Rules provide you can be set down off the floor of the Senate. There is no special privilege which a member of the Senate has. After the obscenities he had voiced about me, the ridiculous statements he had made, I was convinced he was senile. I had a perfect right to say that I thought he was senile, regardless whether he was a Senator or not. In

other words, being a Senator puts him in no special category when he is off the Senate floor. On the Senate floor there are certain rules.

* * *

Mr. de Furia next opened a lengthy cross-examination of Senator McCarthy on the category of charges that involves unauthorized use of secret documents and solicitation of classified information from federal employes.

Senator McCarthy reiterated his stand that a document he had received, containing material from the Federal Bureau of Investigation, was not an officially "classified" document. He also repeated, under questioning, his previous testimony that he had a right and duty under the law to ask federal employes to report any information they might obtain on wrongdoing in the Government, regardless of the classification of that information.

Maj. Gen. Kirke B. Lawton, U. S. Army (Ret.), was recalled to the stand. He testified about a conversation he had in December, 1953, with Brig. Gen. Ralph W. Zwicker, commander of Camp Kilmer, N. J., at the time of the investigation of Major Irving Peress. From the transcript:

Mr. Williams: Would you tell the Committee what the substance of that conversation was? I understand from Mr. de Furia's question that you cannot give the exact quotes, but can you tell us the substance of the conversation?

* * *

General Lawton: I was there for about a half-hour. This was at the time indicated. It was a long time ago. It was a courtesy call, and I honestly cannot tell you one quote that General Zwicker said for or against Senator McCarthy as a result of this conversation.

However, I did form an impression from what was said, and I have made an opinion.

Senator Watkins: Now, I am going to rule on this now, and I am going to be liberal in this ruling.

Will you give us that impression?

(At this point General Lawton conferred with Mr. Pernice. [John Pernice, the General's counsel].)

General Lawton: My impression as a result of this discussion was that General Zwicker was antagonistic toward Senator McCarthy.

Senator Watkins: But you cannot give us any of the language on which you base that conclusion?

General Lawton: Not one quote.

* * *

Roy M. Cohn, former chief counsel for Senator McCarthy's Permanent Subcommittee on Investigations, was called to the stand. He testified that, in his opinion, the document containing FBI material that had figured in earlier testimony was not a "classified" document, and that he had so advised Senator McCarthy while in his capacity as the Subcommittee's counsel.

Capt. William John Woodward, an Army medical officer, was the next witness. He testified that he accompanied General Zwicker to the Feb. 18, 1954, hearing in New York City before the McCarthy Subcommittee. From the transcript:

Mr. de Furia: Now, during the course of the testimony, when General Zwicker was under examination by Senator McCarthy, did you hear any mention of the words "Fifth Amendment"?

Captain Woodward: With reference to General Zwicker, sir? It was mentioned a number of times, mostly concerning the Communist, Peress.

Mr. de Furia: Yes.

Captain Woodward: On one occasion it was referred to, I feel, the General.

Mr. de Furia: What—

—USN&WR Photo

LOOKING THROUGH THE DOOR of the Senate caucus room during the hearings on Senator McCarthy

Mr. Williams: Just a minute. Mr. Chairman, if Mr. de Furia is undertaking to examine this witness as to what was said during the examination of General Zwicker by the Committee, I think that this interrogation is improper, because the best evidence of what was said during the examination is the official record that is already in evidence here.

So, I object to going into this when we have the official record here of exactly what was said by Senator McCarthy, the other examiners, and General Zwicker.

Mr. de Furia: Mr. Chairman—

Senator Watkins: I will hear from the Committee counsel as to his objective and what he intends to show.

Mr. de Furia: Mr. Chairman, I desire to ask the witness concerning an aside by Senator McCarthy, which was not taken down by the reporter.

Senator Watkins: You may answer.

Mr. de Furia: Will you tell us, please, Captain, what was the remark about Fifth Amendment and General Zwicker, who made it, and the exact words, if you can give them to us.

Captain Woodward: Sir, I remember that very, very correctly. The statement—

"FIFTH-AMENDMENT GENERAL"

Mr. de Furia: Who made the statement?

Captain Woodward: The statement was made by Senator McCarthy. It was made rather early in the hearing while he was questioning General Zwicker. At the time General Zwicker was pausing to get an answer for a question, Senator McCarthy looked at his colleagues and, laughingly, said, "This is the first Fifth Amendment General we've had before us."

Mr. de Furia: At the close of the hearing do you recall that General Zwicker was asked to step down from the witness stand?

Captain Woodward: Yes, sir; I recall that.

Senator Watkins: Would you lean a little closer to the microphone? It is difficult to hear you at all times.

Captain Woodward: Sorry.

Mr. de Furia: Will you please tell us, sir, what happened after General Zwicker was asked to step down from the witness stand?

Captain Woodward: General Zwicker, when he was asked to step down from the witness stand, was told by Senator McCarthy—I think he shook his finger at him—"General, you will be back on Tuesday, and at that time I am going to put you on display and let the American public see what kind of officers we have."

* * *

General Zwicker was called to the stand. He was questioned first by Mr. de Furia:

Mr. de Furia: When you reached New York, on Feb. 18, 1954, General, I understand that you were not on the stand in the morning session. Is that right, sir?

General Zwicker: That is right, sir.

Mr. de Furia: But that Senator McCarthy did direct a question or two to you, as you sat in the audience; is that correct, sir?

General Zwicker: He did.

Mr. de Furia: Did you see a man named Harding there, seated ahead of you?

General Zwicker: No, sir.

Mr. de Furia: Do you remember whether or not you made some muttered or audible reference to Senator McCarthy, as you were seating yourself, after answering the Senator's inquiry?

General Zwicker: I do not recall making any remarks.

Mr. de Furia: This man, Harding, I believe stated that you said something with reference to Senator McCarthy, including "s.o.b." Have you any recollection of that, General?

General Zwicker: Up until the time I heard that testimony given in this room, I had had no recollection, nor any reason for making any such a remark. After hearing the testimony given by Mr. Harding, I searched my memory very carefully; and, to this moment, I have no recollection of having made any such remark.

Mr. de Furia: Had there been any differences of opinion between the Senator and you, up to that moment?

General Zwicker: No, sir.

Mr. de Furia: Had you talked to the Senator before he addressed an inquiry to you, seated in the audience?

General Zwicker: No, sir.

Mr. de Furia: Did you see the Senator after that time, and before you were called to testify?

General Zwicker: I did.

A FRIENDLY TALK

Mr. de Furia: And when did you see him, sir?

General Zwicker: I met the Senator in his office, which was adjacent to the hearing room, and chatted with him for a few moments prior to the time the executive session started in the afternoon.

* * *

Mr. de Furia: I take it, it was a friendly conversation, and not about the Peress case, or anything else with which we are concerned; is that right?

General Zwicker: So far as I know, that is correct.

Mr. de Furia: Now, we have had read into the transcript of these hearings, General, what happened while you were under examination. You made reference to certain presidential and Army orders at that time. Will you tell us what orders you refer to in your testimony, and let us have copies, please?

General Zwicker: I referred to two orders: the first being the separation order [of Major Peress], which has just been read into the record; the second being the presidential order, and the changes thereto, as set forth in certain Army regulations.

* * *

Mr. de Furia: In testifying that day before Senator McCarthy, General, were you endeavoring to comply with those directives?

General Zwicker: I was.

Mr. de Furia: Before you testified, General Zwicker, do you recall whether a copy of a letter was given to Senator McCarthy by Mr. John Adams?

General Zwicker: I do.

Mr. de Furia: Who is Mr. Adams?

General Zwicker: Mr. Adams was counselor for the Department of the Army.

Mr. de Furia: Was he at the hearing in New York?

General Zwicker: He was.

Mr. de Furia: Is that both in the morning and the afternoon sessions?

General Zwicker: He was present during the morning session. He was in the building during the afternoon session, but, during the time that I testified, he was not present in the hearing room.

Mr. de Furia: He was not in the executive session?

General Zwicker: No.

Mr. de Furia: When did he give the copy of this letter to Senator McCarthy?

General Zwicker: As I recall, sir, he handed a copy of this letter to Senator McCarthy sometime between the close of the morning session and the opening of the afternoon session.

* * *

(Continued on page 154)

Motorists: here's proof...

Gulf's cleaner-burning, super-refined gasoline solves today's No. 1 engine problem!

This lamp is burning the "DIRTY-BURNING TAIL-END" of gasoline which GULF refines out
This lamp is burning NEW SUPER-REFINED GULF NO-NOX, the cleaner-burning super-fuel

Laboratory tests promised...

. . . these *immediate* and *lasting* benefits from this new, super-refined fuel:

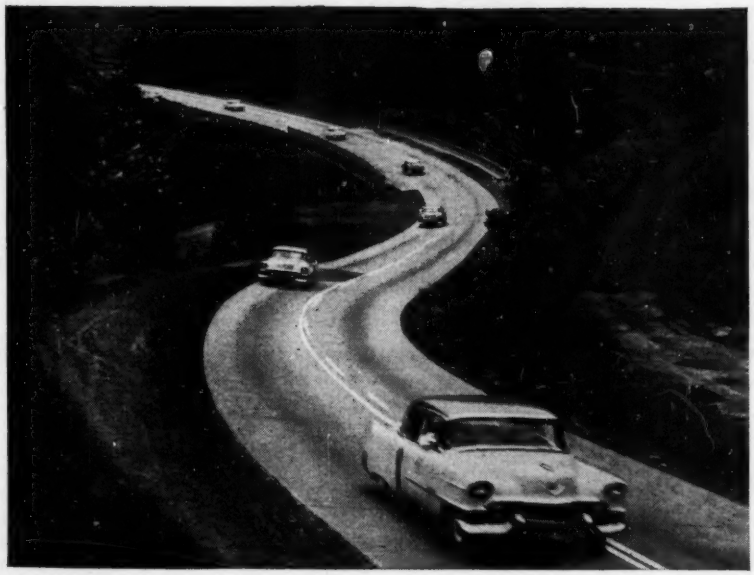
More complete engine protection than from the so-called "miracle-additive" gasolines. Why? Because Gulf refines *out* the "dirty-burning tail-end" of gasoline (the No. 1 troublemaker in high-compression engines)—and then treats this new Super-Refined NO-NOX to give it a *complete range of protective properties*. It protects *every* part it touches against carbon, rust, gum.

Extra gas mileage in all your everyday, short-trip, stop-and-go driving.

No knock, no pre-ignition. Why? Because the anti-knock power of new Gulf NO-NOX has been stepped up to an all-time high.

Stall-proof smoothness. Instant *starts*, too—and fast, fuel-saving warm-up.

That's why new Super-Refined Gulf NO-NOX gives your engine more power-with-protection than you've ever known.



Road tests proved...

These cars, powered by New Gulf No-Nox, actually performed better than new . . . after 15,000 miles!

True! After 15,000 miles per car—covering all conditions of city and country driving—Gulf test cars showed these results:

- Higher-than-new horsepower!
- Better-than-new on gasoline mileage!
- And not a single trace of carbon knock or pre-ignition at any time—even on the steepest mountain grades!

GULF

COMPLETELY NEW! SUPER-REFINED

New Gulf No-Nox

THE HIGH-EFFICIENCY GASOLINE

[This letter, later inserted in the record, was addressed from Secretary of the Army Robert T. Stevens to Senator McCarthy, and dated Feb. 16, 1954. It reviewed the Peress case, stated that it was obvious there were defects in the Army procedures for handling men called to duty under the Doctor Draft Act; that corrective changes had been instituted; that an Army investigation of the entire case was under way; that the decision to give Peress an honorable discharge had been made on Dec. 30, 1953.]

Mr. de Furia: The question is, what conversation did you hear, if any, between Mr. Adams and Senator McCarthy with reference to the copy of that letter handed to Senator McCarthy by Mr. Adams?

General Zwicker: As Senator McCarthy looked at the letter, he said to Mr. Adams:

"I don't believe that Bob Stevens wrote this letter."

* * *

Mr. de Furia: What happened . . . after you stepped down from the witness stand?

General Zwicker: Senator McCarthy addressed me and said—

Mr. de Furia: I want the number of persons present. Did anybody else come in the room or did anybody leave the room?

General Zwicker: No one entered or left the room immediately, sir.

"I'LL PUT YOU ON DISPLAY"

Mr. de Furia: Very well. Go ahead.

General Zwicker: Senator McCarthy looked at me and he said, "General, I'm going to have you back here Tuesday and put you on display before the public in order that they may see just what kind of incompetent officers we have in our Army."

Mr. de Furia: Did you make any reply to that, sir?

General Zwicker: I did not.

Mr. de Furia: What happened next?

General Zwicker: The Senator then invited the press into the chambers.

Mr. de Furia: How many gentlemen of the fourth estate came in at that point?

General Zwicker: A good many, 20–25.

Mr. de Furia: Can you tell us what happened, what was said or done after the press entered the room?

General Zwicker: Yes, sir.

Mr. de Furia: Will you, please?

General Zwicker: I and other members who had attended the morning session, other Army members, since it was now open, took seats in the jury box, which I would judge to be 10 to 15 feet from the table about which the press was gathered, and at the head of which Senator McCarthy took his place.

Senator McCarthy reviewed certain aspects of the testimony.

Mr. de Furia: Well, can you give us his words, if possible, General?

General Zwicker: I cannot.

Mr. de Furia: Very well. Proceed.

Senator Watkins: Can you give the substance of his words, of his statement?

General Zwicker: I can give the effect on me, sir.

Senator Watkins: Well, you were not asked that. If you cannot remember the exact words, you are entitled, under the circumstances at this time, to give substantially what was said.

General Zwicker: Substantially, he indicated that I had been a very balky witness; that I had failed to answer his questions; that he felt that I was covering someone; that he was going to get at the bottom of this matter; that he would not tolerate having officers answer questions in this manner.

* * *

I recall further that he did address remarks to me and others in the jury box.

Mr. de Furia: What were those remarks?

General Zwicker: To the effect that if we didn't agree with the manner in which he had made his presentation before the press, that it would be our privilege to contradict him or refute such statements.

* * *

Mr. de Furia: Did you make any reply?

General Zwicker: I did not. I felt that I was not privileged to make a reply inasmuch as my training has always led me to believe an executive or closed session, whether it be of a court or a board or any hearing, is inviolate until after it has been publicly released. I, therefore, could not make any remark on anything that I heard, in my way of thinking, within the executive session.

Mr. de Furia: Do you recall, General, whether any mention was made to the press about the proposed meeting for the following Tuesday?

General Zwicker: I'm sorry, sir. Will you repeat that question?

Mr. de Furia: I think you said that Senator McCarthy said to you that you would have to come back the following Tuesday; is that right?

General Zwicker: Yes, sir.

Mr. de Furia: Now, was any mention of that made when the press was in the room?

General Zwicker: It was.

Mr. de Furia: Well, was that a repetition of the remark or is it the same remark?

General Zwicker: No, sir. He did not use the same language that he used to me prior to the press coming in.

Mr. de Furia: He did not use that later?

General Zwicker: No, sir.

* * *

ABOUT BEING EVASIVE—

Mr. de Furia: General Zwicker, in testifying before Senator McCarthy, did you intend to be evasive?

General Zwicker: No, sir.

Mr. de Furia: Did you intend to be arrogant?

General Zwicker: No, sir.

Mr. de Furia: Did you intend to be irritating?

General Zwicker: No, sir.

* * *

Mr. de Furia: Can you tell us whether Mr. Cohn questioned you before Senator McCarthy, or not?

General Zwicker: He did.

Mr. de Furia: Was there any difficulty between you and Mr. Cohn?

General Zwicker: None whatever.

Mr. de Furia: What was your demeanor toward Mr. Cohn, and what was Mr. Cohn's demeanor toward you?

General Zwicker: Very proper.

Mr. de Furia: Do you recall having a conversation with General Lawton, General Zwicker?

General Zwicker: I have had many conversations with General Lawton, sir.

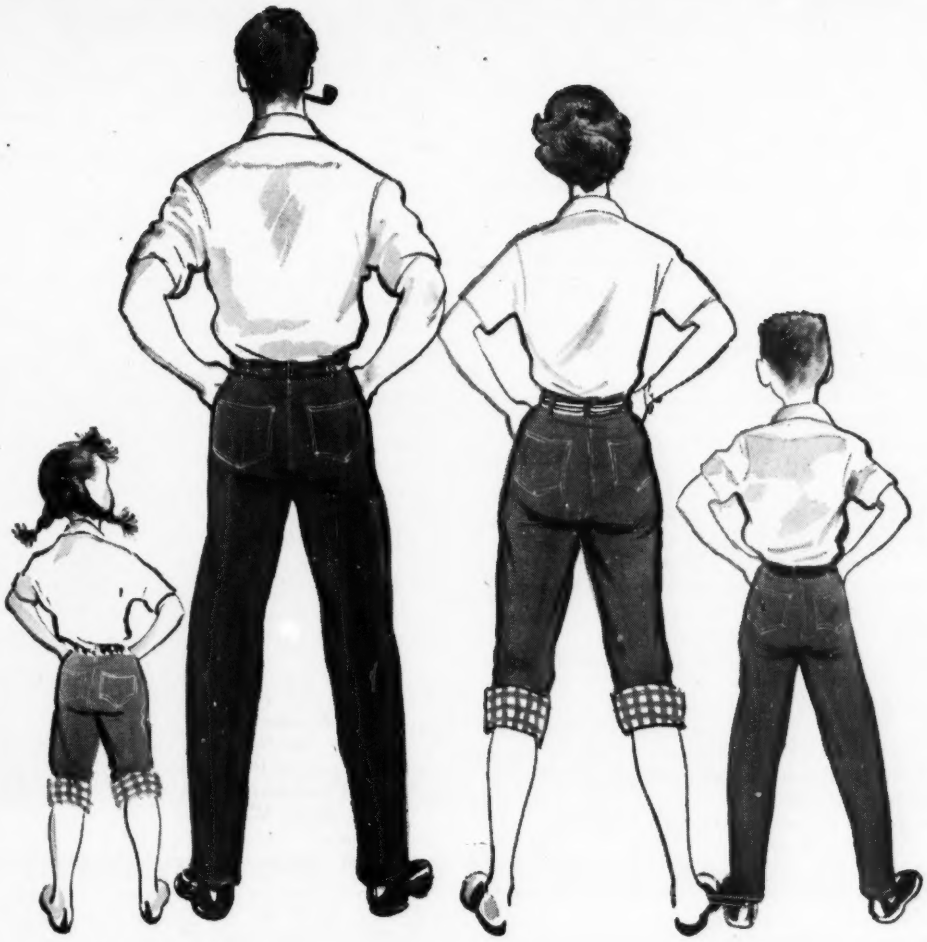
Mr. de Furia: The conversation about which General Lawton testified?

General Zwicker: Yes, sir.

Mr. de Furia: You recall that conversation?

General Zwicker: I do.

(Continued on page 156)



Just who <u>does</u> wear the pants in the family, these days?

It takes a heightened vigilance
To tell, today, who wears the pants.

For folks and kids with equal ease
Disport themselves in dungarees.

Unless you check the height (or spread)
You're very apt to be misled.

Don't let your eyesight worry you,
But *do* assess your point of view.

For family life, like family dress,
Has found a new togetherness.

Where once the members laissez-faired,
Today their interests are *shared.*

And this togetherness applies
To what the family wants or buys.

Before they realize a dream,
They huddle—like a football team.

No longer is it "he" or "she,"
But "you and I," or "they," or "we."

This also goes for what they read—
It *must* resolve a family need.

And in the entire U.S.A.
One magazine does this today—

Not simply things about the house,
But what affects the kids or spouse.

So—if you wish to sell your wares
And reach the family that *cares,*

The moving finger plainly scrawls,
"The place to do it is

McCall's

Mr. de Furia: In his testimony, General Lawton was unable to recall any specific words or, as I think, as he said, any specific quotes on the subject of Senator McCarthy.

Do you recall any conversation?

General Zwicker: I do not.

Mr. de Furia: Do you recall discussing Senator McCarthy in your conversation with General Lawton?

General Zwicker: No, sir.

Mr. de Furia: When did the Peress case first come to your attention, sir?

General Zwicker: In August of 1953.

Mr. de Furia: Had you at any time given the name of Peress to Senator McCarthy, or to his Committee?

General Zwicker: Yes, sir.

Mr. de Furia: Was that done by you voluntarily, or as a result of being asked?

General Zwicker: As a result of being asked by Mr. Anastos, of Senator McCarthy's Committee.

* * *

UNTRUTHS? "CERTAINLY NOT"

Mr. de Furia: General, in testifying before Senator McCarthy, did you utter any untruth whatever?

General Zwicker: Not knowingly; I did not.

Mr. de Furia: Have you gone over your testimony since that day in New York?

General Zwicker: Yes, sir.

Mr. de Furia: Can you tell this Committee today whether or not, upon reflection and consideration of your answers, you, in your opinion, uttered any untruth whatever, under oath, before Senator McCarthy?

General Zwicker: In my opinion, I certainly did not.

* * *

Mr. Williams then began cross-examination of General Zwicker.

Mr. Williams: . . . I shall pass from that question, General, the question as to whether or not Peress was under investigation, to your knowledge, in August of '53, for Communist activities, and I can ask you, sir, if he remained on active duty in September of 1953 at your post?

General Zwicker: He did.

* * *

Mr. Williams: Then, in December of 1953, he was still on active duty at your post?

General Zwicker: He was.

Mr. Williams: Is that correct?

General Zwicker: Yes, sir.

Mr. Williams: Of course, you cannot tell us, as I understand, your interpretation and your counsel's interpretation as to the course of the investigation at this time?

General Zwicker: That's correct.

Mr. Williams: It was in January, 1953, that you had had this conversation with Mr. Anastos, is that right?

* * *

Mr. de Furia: Mr. Williams, wasn't that 1954?

General Zwicker: Yes, 1954, not 1953.

* * *

Mr. Williams: Now, at the time that you had that conversation, Peress was still on active duty at Camp Kilmer?

General Zwicker: He was.

Mr. Williams: He was still at that time a major?

General Zwicker: Yes, sir.

Mr. Williams: So that there had been an elapsed period of some six months since this case came to your attention for the first time when you took over as commander of Camp Kilmer?

General Zwicker: Yes, sir.

Mr. Williams: Now, General, you were asked on February 18, when you took the witness stand, this question. So that you can follow with me, I direct your attention to page 146 of the printed copy.

Mr. de Furia: Is that February 18, Mr. Williams?

Mr. Williams: Yes, sir.

"**The Chairman** [Senator McCarthy]: Well, you know that somebody has kept this man on, knowing he was a Communist, do you not?"

And you answered that question, "No, sir."

Your answer was that you did not know that anyone had kept him on, knowing he was a Communist, is that right?

General Zwicker: That's correct.

Mr. Williams: Now, when you made that answer, you did know, did you not, that in August of 1953, he had claimed the Fifth Amendment when asked about his Communist activities?

General Zwicker: I must respectfully decline to answer that.

Just a moment, please.

(The witness confers with his counsel, Colonel Johnson.)

Senator Watkins: I would like to have the question read back. It seems to me there was something in the question that might be objectionable.

* * *

The question, you are basing that on a statement. I don't remember that being in evidence that he in August was known to be a Communist.

WHAT "RECORD WILL SHOW"

Mr. Williams: Yes, sir.

* * *

The record will show that I asked you [General Zwicker] just a few moments ago this question: I said to you, "General, did you know the day after Peress testified before Senator McCarthy's Committee in executive session that he had refused to answer questions about his Communist activity?" And you said, "Yes, I knew."

Then, I directed your attention to this question, which had been propounded to you on February 18 of 1954, the day in question here, and at that time you said you did not recall whether he had refused to tell whether he was a Communist.

Now, my question to you, General, is this: Which is your position, did you or did you not know at the time, and, if both of your answers are correct, is there an explanation of the inconsistency?

General Zwicker: If there is an inconsistency between—there seems to be an inconsistency. The statement on page 147 that "I don't recall whether he refused to tell whether he was a Communist"—"to tell whether he was a Communist"—is still correct; and I reiterate that I did know at that time, as I answered you earlier, that I was aware that Major Peress did take the Fifth Amendment, or took refuge behind the Fifth Amendment, in failing to answer certain questions asked by Senator McCarthy's Committee.

Mr. Williams: Well, you said, did you not, "I don't recall whether he refused to tell"—which was taking refuge under the Fifth Amendment, I understand—whether he was a Communist. You did not recall when you were testifying before Senator McCarthy about this man, when I asked you the question, and you responded, "Yes, I knew that he had taken the Fifth Amendment when asked whether he was a Communist."

Now, you do see inconsistency there, do you not?

General Zwicker: No, sir, I do not.

(Continued on page 158)

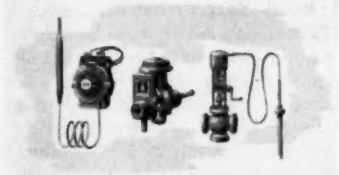
The broomstraw that helped build a business

This was the straw that tested the cakes that baked in America's ovens — before the coming of automatic controls. To eliminate such rule-of-thumb methods, Robertshaw developed dependable, low-cost controls that made oven cooking more nearly automatic. A substantial part of Robertshaw-Fulton's present business was built around this idea.

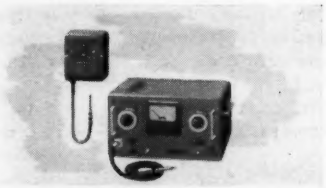
From the control of oven and hot water temperatures in the home as a beginning, Robertshaw-Fulton has grown to seven divisions that today mass-produce mechanical and electronic devices needed for the accurate measurement, control and activation of industrial processes as well . . . helping make possible the automation of American Industry tomorrow.

As automation proves to be the answer to operating economies and increased production at lower cost, American Industry will turn more and more to Robertshaw. For the name Robertshaw-Fulton has meant quality controls through more than 50 years — from the oven heat control that banished the broomstraw to the mechanical and electronic marvels of tomorrow.

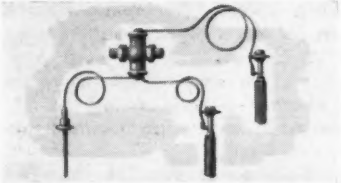
What Robertshaw-Fulton has now to help you with tomorrow's automation



CONTROL of temperatures, pressures, flow of materials, storage levels, motion and other functions can be made automatic with the aid of low-cost Robertshaw-Fulton Controls. Let's discuss *your* specific problems.



MEASUREMENT goes automatic through electronics as well as the more conventional mechanical means. Robertshaw-Fulton instruments and controls include both types, with a wide range of application.



ACTIVATION of machinery — hand or automatically controlled — is a perfect assignment for the bellows. Around this "miracle worker," Robertshaw-Fulton manufactures a multiplicity of instruments.

Mr. Controls

Robertshaw-Fulton
CONTROLS COMPANY
Greensburg, Pennsylvania

Robertshaw-Thermostat Division • Grayson Controls Division • Fulton Sylphon Division • American Thermometer Division • Anaheim Division Bridgeport Thermostat Division • Fielden Instrument Division

Mr. Williams: You do not?

General Zwicker: No, sir.

* * *

Senator Watkins: Mr. de Furia, do you have any further questions?

Mr. de Furia: Yes, sir.

General, did you promote Peress?

General Zwicker: I definitely did not.

Mr. de Furia: Did you discharge him with an honorable discharge?

General Zwicker: I did, sir.

Mr. de Furia: Was that on your own initiative or under orders, sir?

General Zwicker: It was under orders.

PERESS: DENTAL DUTY ONLY

Mr. de Furia: What kind of work was Peress doing while you were commandant at Camp Kilmer?

General Zwicker: He was a dentist and his work was confined strictly to dentistry.

Mr. de Furia: Was he in what you would call a sensitive position so far as intelligence or information or classified material is concerned?

General Zwicker: He was not.

Mr. de Furia: Senator Ervin [Senator Samuel J. Ervin, Jr. (Dem.), of North Carolina, a member of the Committee] suggests that perhaps working with teeth and nerves, that made it a sensitive position.

When you learned about the Peress separation order, did you express to anyone your feelings about the merits or demerits about that separation order?

General Zwicker: I certainly did.

Mr. de Furia: When you learned that Peress was going from captain to be a major, did you express your personal feeling about that?

General Zwicker: I certainly did.

Mr. de Furia: And when you learned that Peress was about to be discharged with an honorable discharge, did you express your personal feelings about that?

General Zwicker: Most emphatically.

Mr. de Furia: How many separation orders for officers come through Camp Kilmer, or came through from July, 1953, to March of 1954? How many a day or a week?

General Zwicker: Our separation capacity at Camp Kilmer is geared to 16,500 a month, sir.

* * *

C. J. Nelson, department security officer of the Department of Justice, was called as a witness. He testified that in 1951 the word "confidential" was the only classification given FBI documents; that there was no particular manner specified for affixing this word to a document in order to classify it. He read into the record an April, 1948, order of the Attorney General stating that FBI reports could not be disclosed by any recipient without specific permission of the Attorney General.

Under cross-examination, Mr. Nelson testified that an executive order of September, 1951, provided that the words "security information" should be imprinted on any document that had been classified.

James N. Juliana, an investigator for the McCarthy Subcommittee, and C. George Anastos, assistant counsel for the Subcommittee, also testified. They confirmed previous testimony by other witnesses about conversations they had with General Zwicker.

Mr. Williams, Senator McCarthy's counsel, then addressed a special request to the Committee. From the transcript:

Mr. Williams: . . . As I understand it, the investigative function of the Committee is now at an end formally, at least, in so far as these proceedings are concerned, and the Committee now passes to its decisional functions, whatever form that will take, and that, of course, is up to the Committee . . .

Because it is of the nature of a judicial proceeding and because there are accusations here, counsel for the other side in the role are applicants and have taken positions contrary to our position on the law and of the facts and, in one instance, on a whole charge.

ON "INDEPENDENT" STAFF

So that it seems to me that, in the interest of keeping this a completely judicial proceeding, I do not believe that it would be reasonable to ask counsel participating in the decisional function in the drafting of a preparatory or preliminary report, because I feel it would be calling upon them to do a superhuman task; namely, taking themselves outside of their role as advocates, asking them to pass upon their own briefs in relationship to ours, and that, therefore, my suggestion is that at this stage counsel, independent counsel, be brought in to read this record and consult with the Committee in its decisional function . . .

Senator Watkins: Well, I will say to you that so far as the Committee is concerned, it stated its position very clearly in the opening statement made by the chairman. That statement was submitted to the members of the Committee and that is the view of the Committee.

That is contrary to what you have said. I am not going to reread it. I think it is well known that we took the position that we were a semijudicial committee. We adopted rules of evidence in order to screen material that came in, but we considered it our duty, first of all, to make an investigation of the facts.

We have our staff people, including our attorneys, making that investigation, gathering together all the facts which helped or hurt Senator McCarthy. We wanted it for the purpose of being able to advise the Senate, and we have done the very best we could so that we would have all the facts before the Senate when we finally get through.

* * *

[Subsequently, it was announced that the Committee had decided to turn down the request by Mr. Williams and Senator McCarthy that independent counsel be brought in to assist the Committee in its final deliberations.]

Senator Watkins concluded the hearing with a final statement. From the transcript:

Senator Watkins: We are not a court; we cannot make any final decision. We have gathered the facts. We report the facts to the Senate as we have them. We give the entire record. It is all printed and submitted and each Senator will have a copy and we also have the authority, if we so desire, to make some conclusions of law and make recommendations.

Now, whether we will go so far as to make recommendations has not been determined by this Committee. I think we might be able to discharge our duty by not making any recommendations.

On the other hand, it has been the custom for committees to make recommendations. Just what we will do in that matter the future will have to determine.

I want to also express my appreciation to Mr. Williams, Senator McCarthy, for the way they have been able to cooperate with us in this search. I realize the situation became tense at times, but that is no more than what happens usually in investigations, particularly if there has been any controversy, or high emotional state of public mind, connected with it.

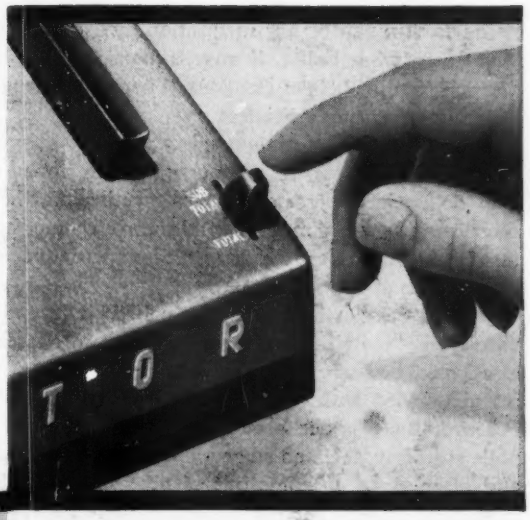
Only Victor Super-Quiet Custom Adding Machines give you...

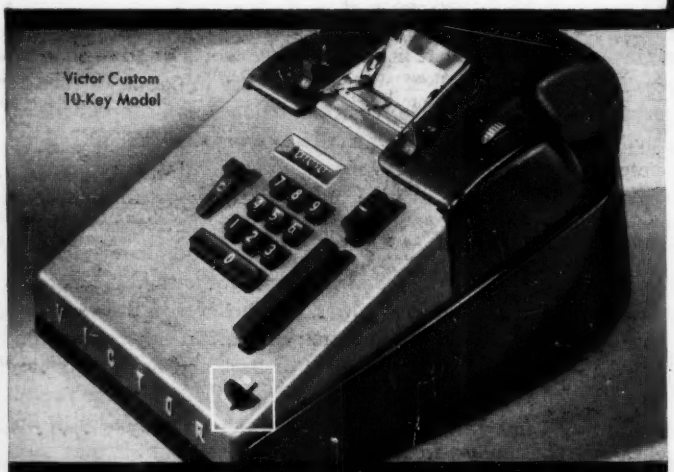
New Select-O-Matic Totaling!

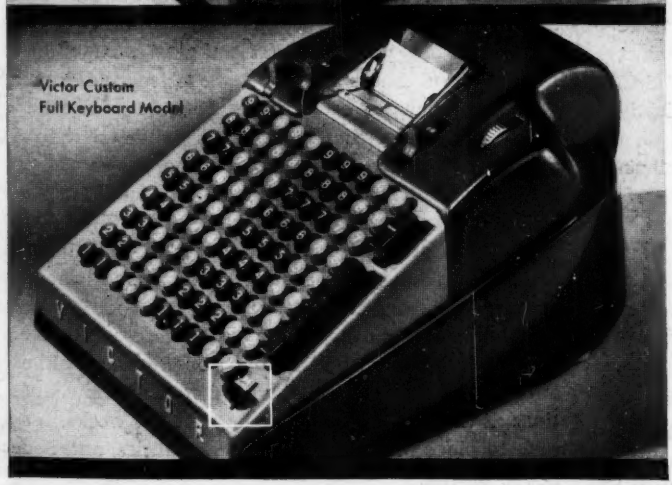
The Key to a New Experience in Speed and Ease of Operation

Another spectacular first from Victor . . . Select-O-Matic brings you new ease, new speed of operation. Now you can take both totals and sub-totals from the add-bar automatically . . . or use the regular dual total key . . . or interchange both methods. This versatility, plus the Victor Custom's *quiet* operation, True-Touch keys, beauty of design and the rugged, durable construction make it the selective choice in adding machines.

Available in 10-key or full-keyboard models, Victor Super-Quiet Customs add, subtract, multiply, divide, *even* calculate. *And*, they automatically compute credit balance. See the new Victors, try them . . . with Victor's 42 basic models you can make the perfect choice for your own, individual figure-work.







Now, take totals or sub-totals from the add-bar Automatically!

With Select-O-Matic set on "total," a touch of the add-bar gives you a total and clears machine . . . automatically!

With Select-O-Matic set on "sub-total," a light touch of the add-bar at any time gives you a sub-total . . . automatically!

Or . . . whenever you wish, you can operate regular dual control key to achieve totals or sub-totals without changing Select-O-Matic setting.

FREE TRIAL! Try a Victor in your own business. Call your Victor Branch or Dealer listed under "V" for Victor in the Adding Machine section of your phone book. Or send coupon below.

VICTOR

36 YEARS OF QUALITY RECOGNITION THE WORLD OVER

VICTOR ADDING MACHINE CO. US-954
Chicago 18, Illinois

Please send complete information on how "Select-O-Matic" makes adding easier and faster . . . tell me what this new key will *do for me!*

Name_____

Company Name_____

Address_____

City_____ State_____

VICTOR ADDING MACHINE CO., Chicago 18, Ill. • In Canada: McCaskey Systems, Ltd., Galt, Ont.

PRINCIPLES ABOVE PARTY

BY DAVID LAWRENCE

THIS IS THE PERIOD for meditation by the individual voter on what ballot, if any, to cast in the coming election for members of Congress. There are among our citizens three group attitudes:

First, there are the straight-party voters who regularly cast their ballots for the party of their choice and who do so in every election, irrespective of whether their own party has made a good record in office or offers to put into effect a program of constructive merit if victorious at the polls.

Second, there is the group of so-called "independent" voters who switch from party to party in successive elections. These are, for the most part, "negative" voters dissatisfied with the record of the party in power.

Third, there is the group which doesn't go to the polls regularly, feels no strong allegiance to any party, and often stays at home out of protest against both candidates or both parties.

When it is considered that only 62.7 per cent of the voting population voted in the presidential election of 1952—which was a high percentage, indeed, compared to previous presidential elections—it is clear that about 36 million persons eligible to vote did not vote two years ago. That's more votes than the total that either major party has ever received, including the record of the 1952 election.

The stay-at-home citizen is just as influential in producing the final election result as the one who goes to the polls. For, by withholding his vote—if he happens to be a Republican, for example—he is contributing a half vote to the Democrats.

Again and again it has been proven that, when there is a protest or negative tide running—and there usually is in varying degrees on different issues against the party in power—the stay-at-homes, if persuaded to go to the polls, can sometimes overcome numerically the effect of the "switchers."

Thus, for instance, it would not help the Republican campaign workers very much to concentrate their efforts on converting those who, due to unemployment or a drop in farm income or any other grievances, have decided to switch from the Republican to the Democratic Party. But if, for every one of the bolters, they can find and get to the polls two persons who are satisfied with their economic situation or who approve of what the party in power has done, the damage by protesting voters would be overcome.

The Maine election results reveal that, while there were 93,000 votes polled for Eisenhower in 1952 which did not mark a Republican ballot for Senator in that same election, many of them remained home this time. Senator Margaret Chase Smith, who was re-elected last week on the Republican ticket, had a pro-Eisenhower record in the Senate, is generally called a "liberal" and has voiced severe criticism of Senator McCarthy. She actually got 16,000 fewer votes than when elected six years ago. The Republican vote in last week's election thus dropped from 71.4 in 1948 to 58 per cent. The Democratic Party, on the other hand, increased its vote for Senator by 38,000 as compared with 1948—a gain from 28.6 to 42 per cent.

If this percentage drop for the Republicans occurs nationally in the November elections, affecting States which, unlike Maine, are closely divided between the parties, we shall see the Democratic Party win control of both houses of Congress by comfortable majorities.

What is the average voter to do—shall he vote his protest against the party in power, or shall he judge the whole record on balance and support the incumbent party? Or shall he express his dissent from the leadership of both major parties and stay at home?

The conservative particularly finds himself in a quandary this time because both the Republican and Democratic parties have in them dominant elements which believe in radical doctrines with respect to the use of the federal power. The believer in States' rights, for instance, can find little comfort in either party. The believer in a government of laws and not just of men can find little solace in some of the acts of the present or past Administrations. Nor can a third party be immediately effective, for the record shows that most third parties have not survived.

There is only one rule that can give satisfaction to the voter, and that is to do as his conscience guides him—putting principles above party. It could mean for the independent voter that he casts his ballot for the Administration on the theory that it deserves a further opportunity to carry out its program. Or it could mean—by voting Democratic or by staying at home—the registering of a protest against the party in power for such deviations from its previously-announced principles as have been revealed.

There is yet time for debate on the issues. And voters of all groups, before making up their minds, should examine carefully the pros and cons of the various questions as they are debated for the next few weeks. It's a time to place principles above personalities, and issues above parties.